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EFFECT OF CLINICAL EVALUATION ON SUPERVISION OF STUDENT TEACHERS.

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THIS PILOT RESEARCH CONSISTED OF EVALUATING CERTAIN ASPECTS OF THE PERSONALITIES OF ELEMENTARY STUDENT TEACHERS, AND OF EXPERIMENTALLY MANIPULATING FEEDBACK CONCERNING FINDINGS TO SUBJECTS AND THEIR SUPERVISORS TO DETERMINE WHETHER SUCH FEEDBACK INDUCED DIFFERENTIAL CHANGES IN (1) STUDENT TEACHER RELATIONSHIPS, (2) PERSONALITY REASSESSMENT, AND (3) WAYS SUPERVISORS WORKED WITH STUDENT TEACHERS. PERSONALITY ASSESSMENT TECHNIQUES WERE USED WITH A GROUP OF ABOUT 80 SENIOR STUDENTS IN ELEMENTARY EDUCATION, BOTH IN A PRESTUDENT TEACHING AND POST-STUDENT TEACHING CONTEXT. THE SUBJECTS WERE EVENLY DIVIDED INTO TWO EXPERIMENTAL GROUPS AND ONE CONTROL GROUP. FOR THE LATTER, PERSONALITY ASSESSMENT RESULTS WERE WITHHELD UNTIL AFTER STUDENT TEACHING WAS COMPLETED. RESULTS WERE PROMPTLY COMMUNICATED TO THE EXPERIMENTAL SUBJECTS, AND WITH RESPECT TO ONE-HALF OF THESE, THE RESULTS WERE COMMUNICATED TO THEIR SUPERVISORS. GENERALLY, EVIDENCE WAS FOUND TO SUGGEST THAT THE PROVISION OF PERSONALITY INFORMATION AND RECOMMENDATIONS TO STUDENT TEACHERS AND SUPERVISORS WAS USEFUL. MANY VARIABLES, HOWEVER, INTERVENED TO AFFECT WAYS IN WHICH THIS INFORMATION WAS UTILIZED AND, HENCE, ITS EFFECTIVENESS. (JH)

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EFFECT OF CLINICAL EVALUATION ON SUPERVISION OF STUDENT TEACHERS

Cooperative Research Project No. S-194

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4. The Problem.

Effective modern teaching goes beyond helping the pupil attain subject matter skills and content, and stresses that there must be significant changes in pupils in motives, attitudes, and general orientation toward themselves and others. Teachers seek to help pupils gain in self-acceptance, independence, and autonomy; they try to encourage creativity, and problem-solving activities, and to help pupils become more self-actualizing; they hope children will learn to respect the points of view of others and to accept others as persons; and to encourage divergent as well as convergent thinking.

To teach in ways which foster procedure to such goals demands that the teacher be student-oriented, rather than self- or subject-oriented. He must employ methods of the kinds which Flanders has termed indirect control, rather than direct control of pupils. Although his methods may vary, depending upon the purpose of the specific lesson, the teacher's efforts are bent toward helping the pupil become an active, rather than a passive learner, and toward thinking for himself rather than striving to reflect the teacher's point of view.

Rogers has related the therapist to the teacher (21), and suggests that both must be congruent, accepting, and interested in knowing as much as possible about their clients or pupils. He feels that both must be empathetic. Thus Rogers feels that the teacher must be the person that he is, and be aware openly of his own attitudes and acceptant of his real feelings. "Because he accepts his feelings as his feelings, he has no need to impose them upon his students or to insist that they feel the same way" (21, p.8).

The freeing of the teacher to understand and accept his feelings is not enough, in itself. There are possibilities for teachers to recognize and to attempt to overcome undesirable feelings or attitudes. In order to do so, help from supervisors, counselors or others may sometimes be needed. For example, the teacher who recognizes that he is insecure may find ways to overcome such feelings, or others may help him to do so. The teacher who has a strong need for approval might find legitimate ways to earn approval and need not depend upon his pupils for satisfaction. The teacher who has a tendency to reject some pupils may be helped to learn to deal with his prejudices.

It is easily demonstrable that many student teachers fail to understand themselves and how they compare in various attributes to norms, or others. Their supervisors as frequently are at a loss to understand their charges, and to interpret the meanings of some student-teacher behaviors. For this reason, supervision may not be as effective as it should be. For example, some student teachers do a creditable job, but might become truly excellent if they were more aware of their own characteristics, or if their supervisors were insightful and creative enough to help them through counseling. Troubleshooting by supervisors might become more effective if more were known about the trainees, and the need for such troubleshooting might be lessened if student teachers were more aware of their own personality characteristics. In a sense this reasoning is analagous to the belief that a therapist should be evaluated and made thoroughly aware of his biases, and of how he affects or relates to other people, in order that he can govern his tactics accordingly.

The argument may be advanced that senior students in a university should "know themselves" quite well by this time. However, clinical evidence suggests that a host of defense mechanisms operate to help one avoid a clear understanding of his deficiencies, and that one may tend to over-emphasize his more socially acceptable personality characteristics for the same reasons.

The purpose of this study is to examine how provision of knowledge concerning certain personality characteristics of student teachers to them and/or to their supervisors might relate to the ways they interact with their pupils and the ways supervisors interact with their trainees.

The kind of personality assessment employed in this project is not that which has the purpose of assessing the student teacher's mental health, although this may be a peripheral outcome, but of describing him to himself and/or to others in ways which may help him anticipate and utilize his strengths and weaknesses.

5. Objectives and Hypotheses.

The objectives of this study were to evaluate certain aspects of the personalities of elementary student teachers, and to experimentally manipulate feedback concerning findings to Ss and their supervisors, to determine whether such feedback induced differential changes in pupil-teacher interaction, in personality reassessment, in ways supervisors worked with student teachers, and to examine problems inherent in studies such as this. The present study is a pilot study, based upon a rationale, rather than upon previous findings. Personality assessment techniques were used with a group of elementary education senior students, both in a pre-student-teaching and post-student-teaching context. Results were withheld from 1/3 of the Ss until after student teaching was completed; this group acted as a control group for this study. For another 1/3 of the Ss, results were promptly communicated to them; this was one experimental group. For a final 1/3 of the Ss, results were communicated to both student teachers and their supervisors; this was the second experimental group.

The following questions were asked:

1. How do personality variables change among experimental and control Ss from one evaluation to the next?
2. How does Flanders' I/D ratio change for Ss from one observation to the next for experimental and control groups?
3. In what ways does the supervisor utilize personality information available to him concerning student teachers?
4. In what ways does the student teacher utilize personality information concerning himself?
5. What problems exist in regard to personality evaluation and counseling of this type?

6. Related Research.

Much of the literature regarding student teaching stresses the need for the cooperating teacher and supervisor to "know the student teacher." The student teacher's personality is not only considered an important area of concern to the supervisor (Stratemeyer (23)), but it is stressed that the student teacher needs to understand himself (Wilhelms (25); Hatfield (13)).

The evaluation of teacher personality has not born much fruit in the past. Most studies which have dealt with teacher personalities have been aimed at predicting success in student teaching or teaching (Miller, (17); Groff, (12); Getzels (9)), but have had relatively poor success. Others have been attempts to determine whether the personalities of "good" or "poor" teachers are different from each other, or from other populations.

Getzels and Jackson (9) suggest that too many studies have been simply a relatively blind hunt for characteristics which differentiate good from poor teachers; it is their view that empirical studies have little chance of success, and that it is important to develop a rationale of how personality variables may be related to teaching behavior.

Rationale.

Choice of personality variables for study. Wallen and Travers (24) examined patterns of teaching which might be generated by the teacher's own needs or motives. They noted, for example, that the lecture method of teaching holds sway in many classrooms, not because it is based on scientific knowledge of learning principles, but perhaps because some teachers have a "need to talk," hence rationalize their use of lecturing. Agreeing that they are probably oversimplifying the relationships, they suggest that perhaps some teachers talk excessively because it is a way of controlling pupils, or because it is a means of achieving recognition, or perhaps because some teachers are compulsive about imparting information.

Similarly, it could be argued that authoritarian teachers may have needs to dominate others, because of basic insecurity. Teachers who are exhibitionistic may have a need to achieve evidence of esteem from others; those with strong unmet emotional needs may be unduly permissive, express undue interest in pupils' private lives, or may keep pupils dependent upon them.

It is not precisely clear where motivation for behavior comes from, or how such motivation eventuates in behavior; three major, and many less comprehensive explanations have been advanced. Psychoanalytically oriented psychologists make much of unconscious motivation; field or self theorists (e.g. Combs and Snygg (6)) emphasize the role of motives in perception; and behaviorists or social learning theorists (e.g. Bandura and Walters (3)) note that motives as well as behaviors are learned, and that reinforcement principles are important in explaining behavior. However, there is agreement upon one point; namely, that a given behavior may reflect differing motives for differing Ss, hence the meaning of the behavior is different, as well as ways of dealing with that behavior which may be implied. Thus, there is no one-to-one relationship (outside the laboratory, if even there) between behavior and motive; nevertheless, whenever motives can be understood, behaviors which look similar to the observer can be differentiated and presumably better handled.

Choice of personality variables and instrumentation for this study was dictated by three concerns: the apparent advisability of ascertaining motives of student teachers, the social relevance of personality variables studied, and the clinical significance of personality characteristics under study. Thus the teacher as a mentally healthy, socially-interacting organism, was essentially the focus of this study.

Behavior change. Behavior change comes about as environmental or situational variables are changed, as motives change, as perceptions change, and as behaviors of varying kinds are internally or externally reinforced.

Most closely related to the present study is the work of Biber et al at the Bank Street College of Education (5), where a well-conceived program of counseling the student teacher has been in effect for more than twenty years.

Counseling may consist of helping the student to interpret to himself the ways his characteristics relate to the teaching role, and providing both external reinforcements for certain behaviors and helping him develop values whereby inner reinforcements for desirable behavior may take place. The student can be reinforced in attempts to develop appropriate teaching behavior, and can be aided in utilizing his desirable characteristics, attempting to change those which are less desirable. Most counseling procedures suggest that behavior which is understood in terms of motives and personality traits can better be dealt with than behavior which is less well understood.

Thus two methods of behavior change were available to supervisors in this study. He might interpret the student teacher's characteristics to the student, explore possibilities for behavioral change, and rely upon the student to modify his own behavior; this was also possible in regard to one experimental condition in which the student teacher received information concerning himself but the supervisor did not. The second means of fostering behavioral change was that of selective reinforcement. Thus the supervisor, knowing for example that a given student teacher was dependent, might reinforce any efforts of that student to be independent, and ignore or negatively reinforce any dependent behavior. Both of these methods depended upon either supervisor or student teacher (or both) having some knowledge of the student's characteristics. This also requires that the supervisor:

1. Can recognize dependent behavior ,
2. Knows how to deal with it,
3. Makes that choice in his supervisory behavior in light of all the circumstances in the student teaching situation . and
4. Does not need or use the student teacher's dependency to feed his own (supervisor) dependency.

It is a moot point, of course, whether short-term counseling and/or supervision can significantly affect behavior, but it is rationalized that whatever can be done by the supervisor to help student teachers can be improved with added knowledge about the student.

Criteria of Teaching Success.

Practically all research in teaching is to some extent dependent upon definitions of competence and effectiveness of teachers. This has been a concern for many years (Barr (4), Ryans (22), Gage (8)), but so little success in finding ways to assess teacher competence has been achieved that Worcester (27) has taken the position that so many variables are engaged in any teaching act that each assessment of competence is essentially dealing with almost a one-of-a-kind problem. Attention of recent writers has been to the microscopic study of teacher behavior, in the hopes that this may eliminate some of the problems of dealing with the multiplicity of variables (8). Perhaps the most comprehensive review of work in this area is in Gage et al, Handbook of Research on Teaching (8), especially chapters by Medley and Mitzel (15), Getzels and Jackson (9), and Withall and Lewis (26). Among the difficulties which must be overcome in assessing teacher competence are those of identification of characteristics which make one teacher more or less effective than another, and development of appropriate instruments, the selection of appropriate criteria, and the isolation of the effects of one teacher from the effects of other teachers as well as the effects of the home or other non-school variables.

The present research represents a value orientation. Thus "effective modern teaching was considered to go far beyond helping pupils attain subject matter skills and content, and stresses that there must be significant changes in pupils in motives, attitudes, social perceptions and skills, creativity, orientation toward self and others, and in thinking procedures" (p. 4). Excellent teachers were considered to seek to help pupils to gain in independence, acceptance of responsibility, and to encourage self-actualization. They were considered to try to encourage divergent as well as convergent thinking, and both social and academic problem-solving activities.

Studies (19)(20) have shown that frequently children are encouraged to be quite blindly conforming, and to become dependent upon the teacher. Bright boys in these studies characterized the model pupil as favored by most of their teachers to be one of docility and conformity, rather than of intellectual liveliness, stimulation, questioning, and independent thinking. The Ss tended to feel that the teachers resented the pupil who dared to question, disagree, or "think differently," and these studies suggested that many pupils resist this norm, hence contribute to disciplinary problems, are under-achievers, or school dropouts.

To teach in ways that favor pupils' self development would seem to require teachers who are pupil-oriented, rather than content-oriented. The activities of the classroom should be centered about the pupil, rather than content needs; about pupil ideas, rather than teacher ideas; and about pupil activity, rather than teacher activity. In brief, the typical teacher may not only be too restrictive and authoritarian in the classroom, but he may assume too much of the responsibility for pupil learning, and do too much of the work. Amidon and Flanders (1), for example, showed that the directive teacher tended to foster dependent pupil behavior under some circumstances.

It has been argued that the dichotomy of authoritarian-democratic teacher leadership provides an inadequate conceptualization of leadership behavior (2). Anderson says that "... it seems reasonable to suppose that leadership styles or teaching methods emanating from knowledge about learning will have a higher probability of meeting criteria of effectiveness than do a priori styles or methods" (2, p.160). In this Anderson is saying that the excellent teacher cannot be characterized by a single model behavior. Depending upon what is to be taught or learned, and depending upon situational variables, the teacher may--indeed, must--vary his tactics. Amidon and Flanders concur in this, and promote the concept of teacher flexibility. They employ the constructs of "direct" and "indirect" teacher control of the classroom and conclude that:

> "It becomes clear that the concept of teacher flexibility was more predictive of teaching success than was the concept of direct-indirect influence. It was found that the teachers of classes in which achievement was above average differed from the teachers of below average classes in their ability to shift their behavior as it was necessary. That is, they could be just as direct as any teacher in certain situations, but they could be far more indirect in other situations. This ability, which is rarely found among teachers categorized as direct, meant that the teacher had the capability to make his own behavior appropriate to the requirements of the class situation at the moment."(1, p. 57)

The present investigators accept the remarks of Anderson and of Amidon and Flanders as being an appropriate conceptualization of the teacher's task. It was concluded that teachers might need to be direct in influence at some times, and indirect at others. However, the meat of the situation lies in Amidon's remarks that direct teachers are rarely able to become indirect when the situation warrants this behavior. For this reason, it was decided to try to assess the ability of the student teacher to be indirect, when the situation was so structured, namely, in a relatively free class discussion. The question of whether the indirect teacher could become direct if required was considered academic; supervisors were expected to observe many instances where each student teacher needed to become direct in influence, merely in the couse of the typical teaching day.

It was argued that insecure, compulsive, hostile, aggressive, or similar personalities would have difficulty in indirect influence upon pupils. It was further argued that counseling by supervisors, selective reinforcement by supervisors of student teachers' movements toward indirect influence, and attempts by student teachers themselves to become more indirect in influence could be noted by progress made by experimental or control groups as the student-teaching experience progressed.

Because it has been extensively researched, because it fit the conceptual framework of this study, and for practical reasons such as provision for training of observers, the Flanders technique of interaction analysis was employed in this study. As Medley and Mitzel say (15, p.271), "Flanders (1960) has developed the most sophisticated technique for observing climate thus far, one which is unique in that it preserves a certain amount of information regarding the sequence of behavior."

Summation.

In order to promote modern school goals, it was argued that teachers must be student-oriented, rather than self- or subject-oriented; and that they must be capable of flexibility, showing ability to utilize indirect pupil influence techniques when warranted. In order to move toward this idealization, it was felt that knowledge of self by student teachers would be useful; it was also felt that possession of knowledge of characteristics of student teachers by supervisors should also be useful in this regard. Experimental methods were employed, in which differential feedback about student teacher personality characteristics was provided to students and/or supervisors. The criterion or dependent variable was student teacher movement toward indirect control as estimated from observations, using Flanders' technique of interaction analysis.

7. Procedures.

a. General design.

Elementary education student teaching experiences at the University of Wisconsin begin during the junior year, when students are supplied with laboratory experiences in the public schools for two mornings or afternoons per week. During the senior year, the laboratory experience increases to ten weeks of full-time student teaching, beginning approximately six weeks after the beginning of the semester. Supervision is by graduate students trained in elementary education.

In this study senior students in the elementary student teaching program were assessed in regard to an interview, Thematic Apperception Test (TAT) cards, the California Psychological Inventory (CPI), and the Edwards Personal Preference Schedule (EPPS) by a qualified psychologist, at the beginning of the semester, prior to student teaching.

One third of the Ss for each semester were assigned to an experimental group, with their permission, in which the students themselves and their University supervisors were given feedback concerning the results of the personality evaluation. Another one third of the Ss were provided feedback, but their supervisors were not, constituting a second experimental group. The remaining one third of the Ss constituted a control group for which feedback was delayed until the end of the semester, after student teaching.

Supervisors visited students in the field at four regular intervals, approximately at the end of the second week of student teaching, the 4th, 7th, and 9th weeks, although an entirely precise schedule of visitation could not be maintained since certain students required extra supervision, and public school vacations or other special events prevented making some visits on time. During these visitations, supervisors, trained in the use of Flanders' interaction analysis technique, observed 20-minute teacher-pupil discussion sessions. Supervisors discussed Ss for whom they had psychological information with the psychologist after each visitation.

At the end of the first semester, after student teaching, all Ss retook the CPI and EPPS. They also threw self and ideal self rectangular card sorts, based upon CPI and EPPS categories. Supervisors threw similar sorts for each S, and the psychologist threw sorts for Ss based upon test information and anecdotal information.

First semester Ss also responded to the IPAT Anxiety Questionnaire.

During student teaching, Ss and supervisors made short anecdotal reports concerning student teaching activities and supervision.

During the second semester three modification were introduced, none affecting experimental procedures. The IPAT Questionnaire was dropped (with permission of the Department of Health, Education, and Welfare) since it did not discriminate among Ss and was considered superfluous in terms of time and money spent. Ss threw card sorts at both the beginning and end of the semester. Supervisors dictated anecdotal remarks to a tape recorder, rather than writing them. Other procedures remained the same.

ANOVA and correlational analyses were made of the data, as reported herein.

b. The sample.

Ss were all seniors in the Elementary Education Student Teaching Program at the University of Wisconsin, Madison, during the 1964-5 academic year. This does not represent all senior students in Elementary Education, since some students elect an internship in lieu of student teaching.

During the first semester, 32 female and 1 male student participated in the study; during the second semester 45 female and 1 male student participated. Grade placement for student teaching ranged from grade 1 through grade 8, and represented a geographical area of a 50 mile radius from the University campus.

Consent of all Ss for participation in the study was received without coercion. All Ss were assured that data collected for the purposes of the experimental study would in no way affect grades, certification, or recommendations from supervisors.

Table 1 shows overall grade point averages for Ss in this study.

TABLE 1

OVERALL (3-YEAR) GRADE POINT AVERAGES FOR SUBJECTS
(Based on 4.0 System)

Semester	N	GPA Range	GPA Median
I	33	2.46-3.83	3.07
II	46	2.29-3.78	2.95

The supervisory staff consisted of four graduate students each semester, of which three continued and one was replaced because of other commitments. Supervisors were pursuing advanced graduate work in Elementary Education, were experienced elementary school teachers, and were selected by the professional staff in Elementary Education. The appointment carried the rank of Part-Time Instructor in the University department of Curriculum and Instruction. Coincident with this appointment was enrollment in a course in supervision of student teaching.

First semester supervisors included three women and one man, two of whom had been experienced in supervising student teaching and two of whom had been cooperating teachers in the student teaching program. Each supervisor was assigned ten students. In the second semester a fourth female supervisor replaced the male supervisor. Three supervisors worked with fifteen students and one supervisor worked with ten.

Cooperating teachers to whom student teachers were assigned did not participate directly in this study, although they were obviously factors in the development of the student teachers' professional capabilities. Cooperating teachers voluntarily agreed to work with student teachers in their classrooms for one semester. They were selected by their local school administrator and approved by the University for this assignment.

c. Instrumentation.

1. The student teaching program.

During this semester, the student is registered for 6 semester credit hours in Planning for Teaching and 10 semester credit hours for Student Teaching in the Elementary School, each credit accounting for one week of work. Student teachers report to campus one day prior to the first day of classes for an all-day orientation to their student teaching semester. During the first week of the semester, the student teacher visits the cooperating school to which he has been assigned to get acquainted with the physical setting and resources, the personnel and the instruction program and to plan with the cooperating teacher for subsequent responsibilities he will have as a student teacher. For the next five weeks the student teacher is on campus enrolled in a workshop in Methods of Teaching Art, Music, Physical Education and Speech in the elementary school. The student works for six hours per week in each of these areas, including both lecture and laboratory work; the faculty for the workshop are members of the Departments of Art, Music, Speech, and Physical Education. In addition, the student teacher is working in an individual conference situation with his student teaching supervisor on plans for the teaching of Reading, Language Arts, Social Studies, Science, and Mathematics. Each student has a minimum of one one-hour conference per week.

During the following ten weeks of the semester, the student spends full time in his cooperating school and gradually assumes full teaching responsibility, and for a minimum of two weeks becomes a full time teacher in all respects. During this ten week period, the student teacher is visited by his University supervisor at least four times, when the supervisor observes the student teaching and confers with both the student and cooperating teachers. In the course of these visits, the supervisor observes the student teaching in all of the instructional areas and at least two of the visits are for extended portions of the day.

In the final week of the semester all student teachers return to campus for a post student teaching workshop; the program for which has been planned by a student-staff planning committee and which focuses on in-service teaching concerns. Also, during this week, each student has a final conference with his supervisor to review and evaluate the student's performance during the ten weeks in the classroom. Both the student teacher and supervisor have prepared written statements of evaluation prior to this conference.

At the end of the semester the cooperating teacher and University supervisor each submit a letter of recommendation which become reference letters for the student's credentials at the Bureau of Teacher Placement. The supervisor also determines the student's final grade in student teaching and indicates to the Elementary Education Faculty his recommendation relative to certification for the student.

2. Orientation of student teachers to the experimental study.

Each semester one of the investigators met with the total group of student teachers during their orientation day to describe the experiment and the purposes for pursuing the study. At this time the two investigators, a project assistant, and the supervisors were introduced, and their respective functions and relation to the study were described. In most cases student teachers had already had contact with one or more of the persons involved.

The purpose of the research was stated to be that of improving the program in elementary education. The focus of this particular effort was to study the effects on student teaching performance when student teachers knew more about themselves, as revealed by data from personality assessment, and when their student teacher's supervisors also had this information about their students.

Students were assured that none of the data collected for purposes of the study would in any way affect credits, grades, certification, or recommendations resulting from student teaching.

The experimental design was described, so that they understood that different students would receive different treatment.

The testing schedule was announced so that students realized all demands on their time would be accommodated within the regular time schedule of the semester. They were also told that each student would have an individual interview with one of the investigators, at which time the student was invited to make any inquiry regarding the study he wished, and that while only students in the experimental groups would receive feedback during the semester, feedback would be made available to every student during the post student teaching workshop.

It was also explained that although some data collecting, i.e. Flanders observations, would take place during supervisory observations, the cooperating teacher was not involved in the study and was receiving no feedback concerning the student teacher; however, the student was informed that the cooperating teacher would receive a description of the study and would know that data was being collected. Students were free to discuss as much of their participation in the study as they chose, but the cooperating teacher had been told the student was under no obligation to share this information (see Medley and Mitzel, 15, pp. 306-307).

Both group and individual tests were administered during the first week on campus, and at the time the interview was held, the investigator asked the subject if he would grant permission for his supervisor to receive feedback. In the first semester all students gave permission; in the second semester, three students asked not to have their supervisors receive information. Two of them reversed their positions and voluntarily granted permission within a day or two of the first interview, but in each case the student's reservation was respected.

At all times the investigators, project assistant and supervisors responded to questions posed by the students in as direct a manner as possible.

During the fourth week of workshop an investigator met with the total group to explain the keeping of anecdotal records and the use of Flander's Classroom Interaction Analysis for collecting data during the student teaching.

Relative to the anecdotal records, students were requested to submit a minimum of one record following the last two supervisory conferences held during workshop and each supervisory visit and conference during the student teaching. In this record, the student was invited to make any comment relative to his planning, teaching situation, teaching performance and supervisory relation he wished. Students were encouraged to note in their anecdotal records what kind of supervisory help, if any, they felt they received. Students in Experimental Group II (students who received feedback) were asked to indicate if it would have been helpful for the supervisor to have received feedback and if so how it would have helped either as a part of teaching or in other respects. Students in Experimental Group I (students and supervisors received information) were asked to indicate what effect they felt the fact that their supervisor did receive feedback had on their teaching and supervisory relations.

The Flander's Classroom Interaction Analysis (1) was described as a technique for categorizing teacher-pupil verbal behavior. Since the technique can be applied only to verbal behavior, the teacher and class had to be involved in some verbal interaction when data was being collected. Consequently, student teachers were asked to plan at least a 20 minute period in which the data collector (supervisor) could observe a discussion. Social Studies had been viewed by the investigators as the instructional area in which such discussion opportunities were likely to occur although the student was encouraged to discuss this with his own supervisor since variations in classroom programs meant that a very liberal definition of social studies would be employed. Students were invited to study the Flanders material if they chose, and were informed of available reading sources for information.

Before the student left campus, the information and directions relative to the anecdotal records and the classroom data collection was given to him again in written form.

3. Psychological evaluation.

California Psychological Inventory.

The California Psychological Inventory (CPI) (10) was chosen as one instrument for psychological evaluation since it has been well-researched, norms have been well established for various groups, and it is designed for "normal" Ss. Gough states that one goal for developing this instrument was to develop descriptive concepts which possess broad personal and social relevance as opposed to instruments which have been devised for special settings such as the psychiatric clinic.

The Inventory consists of 480 items, of which 12 are duplicates, repeated for ease of machine scoring. Although profiles can be provided for Ss for counseling purposes, and were so used with experimental Ss in this study, statistical analysis was made in regard to each scale separately, employing standard scores.

The CPI scales are classified into measures of poise, ascendancy, and self assurance; measures of socialization, maturity, and responsibility; measures of achievement potential and intellectual efficiency; and measures of intellectual and interest modes. Scales are not independent, intercorrelations ranging up to .60. For this reason, factor analyses have been employed with reference tc the CPI; unfortunately for research purposes, analyses reported do not agree with each other. For this reason, in this study each scale was treated as a separate entity.

The CPI is self-administering and requires approximately 45 minutes testing time. Means are provided for detection of dissimulation and faking. Various norms are provided, as well as reports of reliability and validity, judged adequate by the present researchers.

For both semesters of this study, the CPI was administered to all Ss before and after the student teaching period.

Edwards Personal Preference Schedule.

The Edwards Personal Preference Schedule (7) was chosen for this study because it is based on Murray's list of manifest needs, and an instrument for assessing S motivation was desired. Another value of the EPPS is that the response set factor of social desirability has been removed in the construction of the instrument.

Fifteen personality variables (needs) are assessed by 225 forced-choice items, each variable of which is paired with every other variable. Forty minutes testing time is required and the instrument is self-administering.

Unlike the CPI, there appears to be no significant interaction among the scales. Ample evidence of reliability and validity is presented in the Manual, and standard scores are also provided.

The EPPS was administered at the same times as the CPI in both semesters.

IPAT Anxiety Scale.

The IPAT Anxiety Scale (14), Self Analysis form, was employed at the beginning of the first semester of this study. Because no Ss showed other than "normal" anxiety (in spite of apparent evidence to the contrary), it was felt that Ss were faking good. For this reason, use of this instrument was not continued and permission to drop it was obtained from the U.S. Department of Health, Education, and Welfare. Data will not be reported.

Thematic Apperception Test.

In contrast to the more objective instruments discussed above, the Thematic Apperception Test (18) was chosen because of its projective character. Administration of cards 1, 3GF, 4, 7GF, 8GF, 9GF, 10, 12F, 13MF, 17GF, and 11 was made at the beginning of each semester only. The examiner (Ringness) is a qualified school psychologist with post-doctoral clinical training. Interpretation was "intuitive"; no attempt to employ a formal scoring method was used.

Interview.

A semi-structured initial interview was employed. After an attempt to gain rapport, the examiner (Ringness) explained fully the intent and procedures of evaluation, and asked for questions concerning this and the study as a whole. Interview questions then centered about S's elementary, high school, and college experiences, hobbies and interests, special talents, work experiences, teaching-type experiences, travel, parents and siblings, extra-class activities, career motivation, and future plans. Any apparently fruitful lines of inquiry were further explored, but counseling was not attempted at this interview.

Card Sort, EPPS Variables.

A rectangular card sort, with nine compartments was developed from item descriptions contained in the EPPS Manual (Appendix B). Three items were written for each EPPS variable, so that five cards could be placed in each compartment. Items were taken directly from scale descriptions with the exception of the variable known as "aggression"; in this instance items were written so that they appeared socially desirable. Correlations of items with EPPS test results ranged from .72 to .31, with 13 of the 15 correlations significant at the 1% level. Items were judged for appropriateness by graduate students in school psychology, and by two faculty members, both psychologists.

The card sort was developed as a means of attempting to help the examiner and supervisors describe student teachers, and to compare with the ways they described themselves. Further, self and ideal self relationships to the EPPS test, itself, were examined by Mikol (16) in an effort to determine whether the social desirability factor had actually been ruled out of the EPPS as claimed.

In the first semester Ss sorted at the end of the semester as to self and ideal self. The examiner sorted re each student on data based on the test and interview, and on the basis of anecdotal records. Supervisors sorted re each student teacher on the basis of their observations of the student teacher during the semester. Intercorrelations among the sorts and with the EPPS were examined.

In the second semester the procedures remained the same except that pre- and post- student teaching card sorts were obtained from Ss, permitting an examination of changes which might have taken place.

Card Sort, CPI Variables.

Three items were written for each of the eighteen scales of the CPI, providing a total of 54 items. Since category descriptions in the CPI Manual were less specific than for the EPPS, and since CPI scales are not independent of each other, items were written in two ways: Where the scale descriptions in the CPI Manual seemed usable to the judges (see EPPS card sort, above), those descriptions were used for card sort items; in other instances, items were taken from the Manual's list of adjectives provided which described persons high on a given scale, essentially providing items with positive social desirability value. Intercorrelations of CPI scores and the card sort ranged from -.248 to +.718, and only eight scales were significantly correlated with the CPI scores at the 5% level. Thus this card sort apparently tested something other than what was tested by the CPI; however, eighteen significant correlations of card sort variables were obtained in test-retest comparisons, suggesting that the card sort is reliable. Items are shown in Appendix C.

Psychological Evaluation.

From the initial interview, TAT, CPI, and EPPS scores, the examiner attempted to construct a short characterization of S (sample in Appendix A). S's apparent strong motivations, personality traits, and behavior modes were discussed insofar as they could be ascertained from the data. Possible areas of concern to the supervisor were mentioned, together with tentative recommendations, where these could be provided.

Anecdotal Records.

During the first semester Ss and supervisors mailed anecdotal reports to the examiner after the workshop period and after each supervisory visit. These reports were not structured; Ss and supervisors were encouraged to simply report occurrences of any importance from their viewpoints, and to report any concerns, together with any help given or received in regard to these concerns.

During the second semester Ss again sent written anecdotal records to the examiner, but supervisors dictated anecdotal material to a tape recorder, the material of which was then transcribed.

A sample student and a sample supervisory anecdote appear in Appendices D and E.

Flanders Interaction Analysis Process.

The Flanders process of interaction analysis was chosen in order to attempt to assess movement of Ss toward a student-centered approach (1).

Training of observers. Observers were supervisors of student teachers. Prior to the semester, supervisors were provided with copies of Flanders' Manual so that they could familiarize themselves with the interaction analysis theory and process. During the first six weeks of the semester, a workshop period for Ss and supervisors, seven training sessions in observing and recording were provided, a total of 20 hours practice and discussion. Flanders' training materials, consisting of tapes and written materials were employed. In addition, four kinescopes obtained from the University of Wisconsin School of Education, showing Social Studies classes in action, were employed. A variety of taped classroom sessions were used for practice and for reliability studies. Live observations were made independently, but such practice was not feasible for the supervisory group as a whole.

TABLE 2

RELIABILITY COEFFICIENTS, FLANDERS INTERACTION ANALYSIS PROCESS
SEMESTER I

Source	Coefficient of Reliability	
Supervisor A (interpersonal)	.93 (Oct. 30)	.84 (Jan. 10)
" B	.86	.79
" C	.88	.89
" D	.89	.84
Intra-rater reliability	.56	.56

Reliability studies were made at the end of the sixth week of the semester and repeated at the end of the semester. Scott's coefficient was employed, as suggested by Flanders. This coefficient, know as "pi," is calculated as follows:

$\pi = \frac{Po - Pe}{1 - Pe}$ Where Po is the proportion of agreement and Pe is the proportion of agreement expected by chance, which is found by squaring the proportion of tallies in each category and summing these over all categories.

$Pe = \sum_{i=1}^{k} Pi^2$ Where Pi is the proportion of tallies falling into each category. Thus the amount that two observers exceeded chance agreement divided by the amount that perfect agreement exceeds chance is obtained by π.

In the second semester a new supervisor was added to the group and one was dropped. Supervisors again underwent training for a total of 12 hours during the first six weeks of the second semester. Tapes were employed and observations made in a regular classroom setting. Group reliability prior to supervisory visits was estimated at .78 (Flanders prefers .85 as minimal agreement). Table 3 presents subsequent bi-weekly reliability checks.

TABLE 3

BI-WEEKLY RELIABILITY COEFFICIENTS, FLANDERS INTERACTION ANALYSIS PROCESS

Source	Week 1	2	3	4	5
Supervisor A (intrapersonal)	.71			.92	
" B	.80	.93		.88	.89
" C	.94	.94		.87	.88
" D	.87	.87		.86	.75
Group (interpersonal)	.78	.71	.53	.66	.71

It is clear that interpersonal reliability among supervisors for the first semester would not be considered adequate, although intrapersonal reliability was high. For the second semester, a higher interpersonal agreement was attained. It is argued that the reliability is adequate for the purposes of this study, however, on the grounds that the experimental and control Ss were evenly divided among supervisors.

Use of Flanders' technique. During the first semester all Ss were asked to prepare a Social Studies discussion lesson 20 minutes in length, as part of the classroom activity for supervisory visits I, II, IV, and V. Difficulties in obtaining comparable discussions were found. For example, as the semester progressed it was evident that students were defining Social Studies discussion in a variety of ways. To some students discussion meant any kind of verbal interaction that occurred between student and teacher; to others it meant a situation in which students and teacher discuss a common problem. Others centered their interaction around film-strips, the weekly reader, a review of a unit, etc. A few students chose to set up their own criteria; i.e., one student wrote, "I did not go out of my way to create a special situation if it was not what I felt was best for the particular objective or lesson I had."

The first observation by a supervisor is generally short since the student teacher has assumed only a minimum of classroom responsibilities. Since this observation included a 20 minute interaction tabulation by the supervisor, time which the supervisor could dedicate solely to observation was limited. Some supervisory conferences were thus affected negatively since the supervisor could remember little of the lesson he had categorized and did not have an opportunity to see much else. In one case a student teacher was having discipline problems and the supervisor was forced to choose between concentrating on the interaction categorization or concentrating on the student in hopes of offering help.

Some cooperating teachers, too, contributed to the supervisors' research dilemma by deciding with, or for, their student teachers that the social studies discussion was not really as important as some other curricular area on a particular observation. One student wrote, "I felt it was more important that my supervisor see work in each area rather than planning something special. My cooperating teacher suggested this. I felt so too."

Some observations were missed because supervisors were detained at another school and missed the scheduled discussion which the student had planned. Some observations were missed because of student illness.

No decisions had been made concerning supervisors' use of the interaction matrix as a feedback to students about their lesson. One supervisor used the matrix in this way, and the other three did not.

In an attempt to remedy the above difficulties and limitations, a variety of re=definitions, training, etc. took place prior to, and during, the second semester. These were:

A. Supervisors set criteria for discussions to be held with pupils by student teachers. These were distributed in mimeographed form for student teachers, and discussed with them individually.

B. Letters were sent to cooperating teachers, explaining the necessity for student participation in such discussion sessions, and requesting their cooperation.

C. The number of supervisory visits was cut from five to four, allowing more time to be spent with a student teacher at each visit. Supervisors did not interpret interaction matrices to student teachers until after student teaching had been completed.

For these reasons, data related to the Flanders' interaction analysis technique must be treated separately for the two semesters. In other respects, however, data collected were similar, and Ss were grouped for data analysis, i.e. Experimental Group I, in which both student and supervisor were informed concerning the student's characteristics were lumped for the two semesters, as were Experimental Group II, in which only students received feedback, and the Control Group.

8. Findings and Analysis of Data.

A. Nature of personality variable changes. Question One was concerned with the nature and extent of changes in personality variables for Ss from one administration of evaluation devices to the next. Changes could be either those reflecting recommendations of the examiner, or changes not mentioned to Ss or supervisors as being desirable. Both will be considered here.

1. CPI test-retest findings.

Table 4 presents mean T-scores for variables of the CPI for experimental and control groups, and for total groups, both semesters combined. T-scores, obtained from the CPI Manual, have the usual distribution, with a mean of 50 and standard deviation of 10.

TABLE 4

T-SCORE MEANS FOR CPI VARIABLES, BY SUBJECT GROUPS, COMBINED SEMESTERS.

Variable	E-1 (N=25)		E-2 (N=25)		Control (N=25)		TOTAL (N=75)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Do	55.9	57.4	58.9	59.0	57.8	55.1	56.2	57.2
Cs	55.6	57.2	58.0	56.4	56.5	55.6	56.7	56.4
Sy	54.4	57.4	58.9	58.8	55.1	55.8	56.1	57.4
Sp	58.0	60.2	61.6	61.6	55.8	57.6	58.4	59.8
Sa	59.4	61.6	59.8	60.1	58.5	58.8	59.2	60.2
Wb	47.9	51.5	53.4	52.1	50.6	51.9	50.6	51.8
Re	50.3	50.9	53.6	54.8	52.2	52.2	52.0	52.6
So	49.7	50.2	52.6	50.1	51.2	51.8	51.2	50.7
Sc	45.8	48.3	48.3	47.3	46.0	44.4	46.7	46.7
To	55.3	58.5	58.7	60.4	55.7	56.0	56.6	58.3
Gi	45.9	47.1	49.1	47.4	43.4	42.8	46.1	45.8
Cm	52.7	51.4	50.4	49.8	52.2	52.5	51.8	51.2
Ac	53.7	56.2	55.0	53.7	51.0	52.6	53.2	54.2
Ai	59.8	63.5	62.0	62.0	60.4	60.6	60.8	62.1
Ie	56.6	60.5	57.8	57.6	56.5	58.4	56.9	58.8
Py	55.4	60.7	58.2	57.2	51.7	53.4	55.1	57.1
Fx	63.4	64.5	59.9	63.4	57.5	59.4	60.3	62.4
Fe	50.8	46.8	49.4	47.9	53.1	52.1	51.1	48.9

Total Group means indicate that Ss are one standard deviation or more above the normative mean of 50 for the variables Ai (Achievement via independence) and Fx (Flexibility). Two other means, Sp (Social Presence), and Sa (Self Acceptance) approach this degree of superiority. All other variables are within one standard deviation of the normative mean. It may be stated that this sample represents itself as being superior in regard to the variables mentioned, and average in other respects. This is not unexpected, since Ss have been screened for academic achievement before admission to the elementary student teaching program, and for gross social and emotional adjustment in pre-student teaching laboratory courses.

Appendix F presents analyses of variance for CPI variables, studied individually. Since repeated measures were used, a nested deisgn for analysis of variance (Greenhouse and Geisser (11)) seemed most suitable. In the case of all variables, test, group, and test x group effects did not achieve statistical significance. It may be concluded that for these particular analyses made, within-group variability was such that other factors were overshadowed. However, as will be seen, other analyses were made.

TABLE 5

MEANS, CPI TOTAL SCORES, COMBINED SEMESTERS.

Group	E-1 (N=25)		E-2 (N=25)		Control (N=25)	
	Pre	Post	Pre	Post	Pre	Post
$\overline{X}$	53.8	55.9	55.3	56.1	53.4	53.8

TABLE 6

ANALYSIS OF VARIANCE OF CPI TOTAL SCORES

Source	df	ss	F
Tests	1	37.5	F_1= .206
Groups	2	111.0	
Ind (within groups)	72	2870.9	F_2= 1.400 NS
Groups x Test	2	110.3	
Ind x Test (within groups)	72	13,109.0	F_3= .606
TOTAL	149	16,239.0	

Tables 5 and 6 present means and analysis of variance for total CPI scores. The total score has sometimes been regarded as an index of overall adjustment. CPI scores are not limited by a fixed maximum, and in general, the higher the total score, the more superior S is presumed to be. It is seen from Table 6 that group, test, and group x test effects did not attain statistical significance.

In order to further study the possible effects of experimental factors, changes in individual S's scores were examined. In this study the examiner made differential recommendations for change among the Ss, i.e. depending upon the nature of S's profile, changes for one or more variables might be recommended, but these would be different for different Ss.

Use was made of the profile afforded by CPI test scores (Appendix G). Thus when a pre-test profile suggested to the examiner that recommendations be made for change in a given CPI variable, it was possible to examine post-test results to see whether such change had been made.

In practice, it was arbitrarily decided to make recommendations concerning variables when the T-score of 30 or less was encountered. In comparing pre- and post-test results, a change in the recommended direction of 10 or more points (one s.d.) was counted as sufficient evidence of change. Results are presented in Table 7. A Chi-square analysis was made, using Yates' correction where appropriate, comparing changes in the recommended direction with lack of change and negative change combined.

It is seen that for first semester Ss no statistically significant changes were made. However, in regard to second semester Ss, and for both semesters combined, Chi-square was significant at the 1% level. More positive changes were made by Ss in the experimental group (E-1) where both student and supervisor received feedback, including recommendations for change.

TABLE 7

CHANGES OCCURRING IN RELATION TO CHANGES RECOMMENDED, CPI VARIABLES.

Group	Number of changes recommended	Changes Occurring In Accordance	No Change	Not in Accord.
SEMESTER I				
E-1	7	1	5	1
E-2	11	4	7	0
Control	23	2	18	3
$\chi^2 = 3.623$ NS (accordance vs. no change + not in accordance)				
SEMESTER II				
E-1	21	12	9	0
E-2	11	1	10	0
Control	13	0	13	0
$\chi^2 = 12.059$ $p < 1\%$				
COMBINED SEMESTERS				
E-1	28	13	14	1
E-2	22	5	17	0
Control	36	2	31	3
$\chi^2 = 14.751$ $p < 1\%$				

Thus for CPI data it is seen that group, test, and group x test results were not significant, but that when differential recommendations were studied, more recommended changes were made by Group E-1 than for other groups.

TABLE 8

CPI CHANGES OCCURRING BUT NOT RECOMMENDED.

Group	Total changes occuring	Desirable	Neutral	Undesirable
SEMESTER I				
E-1 (N=10)	14	11	1	2
E-2 "	9	4	1	4
Control "	22	10	0	12
$\chi^2 = 4.356$ NS (Desirable vs. neutral + undesirable)				
SEMESTER II				
E-1 (N=15)	32	21	6	5
E-2 "	29	13	7	9
Control "	19	9	1	9
$\chi^2 = 3.058$ NS				
COMBINED SEMESTERS				
E-1 (N=25)	46	32	7	
E-2 "	38	17	8	13
Control "	41	19	1	21
$\chi^2 = 6.720$ $p < 5\%$				

Table 8 shows CPI changes in T-scores for variables in which changes occurred to the extent of 10 points or more, but which were not recommended by the examiner. Changes were considered positive, if likely to be beneficial even though not recommended; for example, a student might show adequate Ac (Achievement via Conformity) and not be recommended for change, yet might gain in this regard, which could be beneficial. Changes of 10 points which appeared to have no practical significance for S's classroom behavior were considered neutral; undesirable changes were considered negative. It is seen that positive changes which were not recommended were greatest in number for Group E-1 when both semesters were combined; for this analysis Chi-square reached the 5% level of significance.

TABLE 9

T-SCORE MEANS FOR EPPS VARIABLES, BY SUBJECT GROUPS, COMBINED SEMESTERS.

Variable	E-1 (N=25)		E-2 (N=25)		Control (N=25)		TOTAL (N=75)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Ach	50.4	51.6	50.4	52.3	53.0	52.2	51.3	52.0
Def	46.8	48.7	46.7	48.5	49.6	51.8	47.7	49.7
Ord	48.7	45.7	47.2	49.3	53.1	53.0	49.7	49.3
Exh	47.7	50.6	51.2	57.6	49.2	51.9	48.7	53.4
Aut	52.0	54.2	54.4	55.3	53.2	51.1	53.2	53.6
Aff	43.9	46.3	47.7	46.3	44.7	48.2	45.4	46.9
Int	55.7	57.1	53.6	55.0	51.6	53.8	53.6	55.3
Suc	51.1	47.5	50.4	49.8	49.4	48.0	50.3	48.5
Dom	50.3	51.7	49.1	49.1	45.0	45.4	48.1	48.8
Aba	47.8	42.8	46.6	43.5	46.3	45.0	46.2	43.8
Nur	47.4	45.7	49.6	47.7	49.1	48.4	48.7	47.3
Chg	52.8	51.0	53.8	51.8	49.8	49.7	52.1	50.8
End	52.0	51.4	49.0	45.7	51.0	50.7	50.7	49.3
Het	52.1	52.1	49.5	51.8	54.2	53.3	51.9	52.4
Agg	53.0	53.0	51.1	48.5	48.9	48.2	51.0	49.9

2. EPPS test-retest findings.

Table 9 presents mean T-scores for EPPS variables for experimental and control groups, and for total Ss, both semesters being combined. The EPPS differs from the CPI in that it is a forced-choice instrument in which variables are paired with every other variable. For this reason, a high score in one area must be balanced by correspondingly lower scores in other areas. Examination of means for the Total Group shows Ss to represent themselves as normal insofar as their needs are concerned.

Appendix H shows analyses of variance for EPPS variables. It is seen that test, group, and group x test effects were not statistically significant.

TABLE 10

CHANGES OCCURRING IN RELATION TO CHANGES RECOMMENDED, EPPS VARIABLES.

Group	Number of changes recommended	Changes Occurring In Accordance	 No Change	 Not in Accord.
SEMESTER I				
E-1 (N=10)	51	15	36	0
E-2 "	51	17	34	0
Control "	56	14	40	2
$\chi^2 = .785$ (accordance vs. no change + not in accordance)				
SEMESTER II				
E-1 (N=15)	68	17	49	2
E-2 "	56	6	48	2
Control "	60	12	47	1
$\chi^2 = 4.116$ NS ($p < 10\% = 4.60$)				
COMBINED SEMESTERS				
E-1 (N=25)	119	32	85	2
E-2 "	107	23	82	2
Control "	116	26	87	3
$\chi^2 = 1.065$				

Table 10 presents EPPS data based on differential examiner recommendations. It is seen that no significant changes occurred.

TABLE 11

EPPS CHANGES OCCURRING BUT NOT RECOMMENDED

Group	Total Changes Occuring	Desirable	Neutral	Undesirable
SEMESTER I				
E-1 (N=10)	31	11	10	10
E-2 "	22	5	7	10
Control "	32	8	6	18
χ^2 = .723 (Desirable vs. neutral + undesirable)				
SEMESTER II				
E-1 (N=15)	48	7	23	18
E-2 "	37	10	15	12
Control "	37	6	21	10
χ^2 = 2.268 NS				
COMBINED SEMESTERS				
E-1 (N=25)	79	18	33	28
E-2 "	59	15	22	22
Control "	69	14	27	28
χ^2 = .452				

Table 11 presents data concerning changes in EPPS scores which did _not_ reflect examiner recommendations. No significant changes occurred.

In regard to Tables 4-8 a number of inferences can be made. It may be argued that in regard to personality characteristics assessed by the CPI, since significant test-retest changes occurred where supervisor and student both received feedback and recommendations, that supervisors were able to counsel re some of the variables where change was recommended. However students, themselves, paid little attention to recommendations and did not appear to try to effect changes unless supervisors so counseled. It is to be remembered that such changes occurred only in regard to second semester (and combined) data. This suggests that, with experience, supervisors gained in the ability to understand recommendations and effect student change.

The fact that changes did not similarly occur in EPPS variables suggests that these variables, which relate to Murray's _needs_, are less amenable to change than the CPI variables which are more closely related to overt behavioral characteristics.

It should be noted that not all _Ss_ were recommended for changes. It should also be remembered that the number of recommended changes varies from _S_ to _S_. For these reasons it cannot be generalized that all _Ss_ were equally affected by counseling, or that all supervisors were equally effective in fostering change. (The latter point is being studied in detail by Thelen, who is attempting a doctoral thesis concerned with characteristics of supervisors of this study.) At best it may be concluded that some differential effects were noted among experimental and control groups.

It must be remembered that the results discussed above refer to self-report information, i.e., the results of test data. The question of overt behavior changes will be discussed in relation to Questions 4 and 5, in which ways information was utilized by Ss and supervisors was studied.

Question 1, concerning changes in personality variables can then be answered best by noting that no significant effects of test, group, or group x test were noted for either the CPI or EPPS. However, when differential recommendations made by the examiner were considered, the experimental group in which S and supervisor both received feedback changed significantly insofar as a Chi-square test of CPI variables was concerned.

B. Changes in I/D ratio scores.

Question 2 was concerned with Flanders' I/D ratio over a series of four observations of discussions prepared by Ss in their classrooms. The Flanders technique provides a number of scores for various categories of classroom interaction. However, the I/D ratio, reflecting the proportion of indirect to direct control of pupils by the teacher seemed most appropriate to the purpose of this study. It was felt that teachers who are pupil-oriented should be able to demonstrate, upon demand, the ability to work with pupils in an indirect control manner. Accordingly, classroom discussions were especially prepared by Ss to demonstrate this teacher ability.

TABLE 12

ANOVA FOR I/D RATIOS, SEMESTER I,
3 GROUPS, 4 OBSERVATIONS. N = 30

	SS	df	Var. est.
Groups	1	2	.500
Observations	10	3	3.333
Interaction	5	6	.833
W/I Cells	5407	120	45.058
TOTAL	5423		

$$Fi = \frac{.833}{45.048} = .018$$

$$Fr = \frac{.500}{45.048} = .011$$

$$Fe = \frac{3.333}{45.048} = .073 \text{ NS}$$

TABLE 13

ANOVA FOR I/D RATIOS, SEMESTER II, 3 GROUPS, 4 OBSERVATIONS. N = 45

	SS	df	Var. est.
Groups	31	2	15.500
Observations	9	3	3.000
Interaction	19	6	3.167
W/I Cells	1036	168	6.167
TOTAL	1095		

$$Fi - \frac{3.167}{6.167} = .502$$

$$Fr = \frac{15.500}{6.167} = 2.513 \text{ NS}$$

$$Fe = \frac{3.000}{6.167} = .486$$

Table 12 shows a simple analysis of variance for first semester I/D ratio data; Table 13 shows similar analysis for second semester data. (Because classroom discussions changed in content and purpose, the previously described nested design ANOVA was not employed. That is, it was felt that the discussion, itself, was essentially the instrument and that the Flanders technique was simply a means of recording the behavior.)

It is seen that groups, observations, and interaction did not achieve statistical significance for either semester.

Figures 1 and 2 show graphically the mean I/D ratios for subject groups by observations. It is apparent that no consistency was obtained for groups or observations. A number of possible reasons may account for this. For example, the reliability of observers rating student teachers' discussions was not consistent, as previously discussed under instrumentation. It was also clear from supervisor and student anecdotes that there was considerable difficulty in providing for adequate teacher-pupil discussion sessions; for example, a discussion at first-grade level is more difficult to maintain than one at sixth-grade level. Further, supervisors did not always appear when scheduled, and it was not always possible to meaningfully fit a discussion into the supervisory visit.

More serious problems existed, however, One such problem relates to the role of the supervisor. Thus, as Medley and Mitzel mention (15,p.253)when the supervisor must make difficult discriminations one after the other, it is important for him not to have to do anything else at the same time. That is, the supervisor must not also be trying to locate the student's problem areas, or find activities to be later discussed with the student. Further, the matter of philosophy of the student and supervisor enters into the way discussions are carried on. Not all student teachers felt that indirect control was desirable, and not all supervisors were willing to try to change students to a more indirect approach.

In substance, it was found that the Flanders technique was useful for showing Ss how their discussions were regarded by observers, but methods employed in this study did not result in changes of any consistency in teacher-pupil discussion practices. In fairness to Flanders it must be stated that unless better control of the nature of discussion could be obtained than was possible in this study, it would not be surprising to find results of observations lacking in meaningful results. It is probable that this particular criterion of experimental change was inappropriate and should not be employed if similar studies are attempted.

C. Use of test results by supervisors.

Question 3 is concerned with the ways supervisors employed feedback given them by the examiner to change students' characteristics. Questions concerning the adequacy of data collected by the examiner, the relationship of feedback data to overt student teacher behavior, as well as of changes noted are involved.

1. Adequacy and accuracy of test results and feedback.

At the end of the first semester rating sheets (Appendix J) were distributed to Ss, one item of which called for S's opinion of the examiner's evaluation of him. Of the first semester sample of 30 Ss 28 agreed that the evaluations were accurate and useful. Both of the 2 Ss not agreeing had been viewed by the examiner as confident and poised, but stated that this was the way they wished to be seen, rather than the way they actually were.

At the feedback sessions of the second semester, a direct question was asked of Ss concerning accuracy of examiner evaluations. For 30 Ss this occurred at the beginning of the semester (groups E-1, E-2) and for 15 Ss

Figure 1 Mean I/D ratios, Semester I.

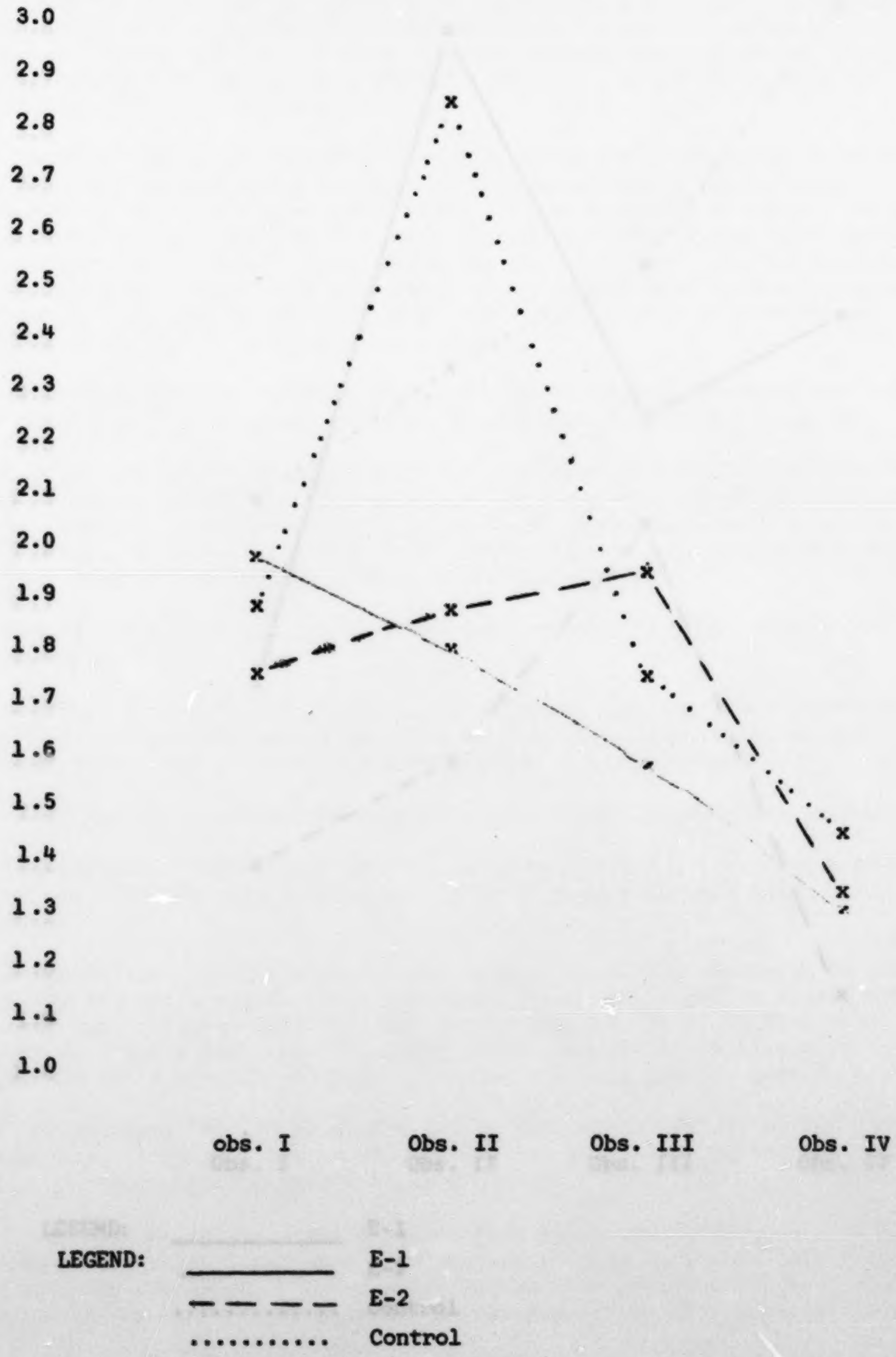
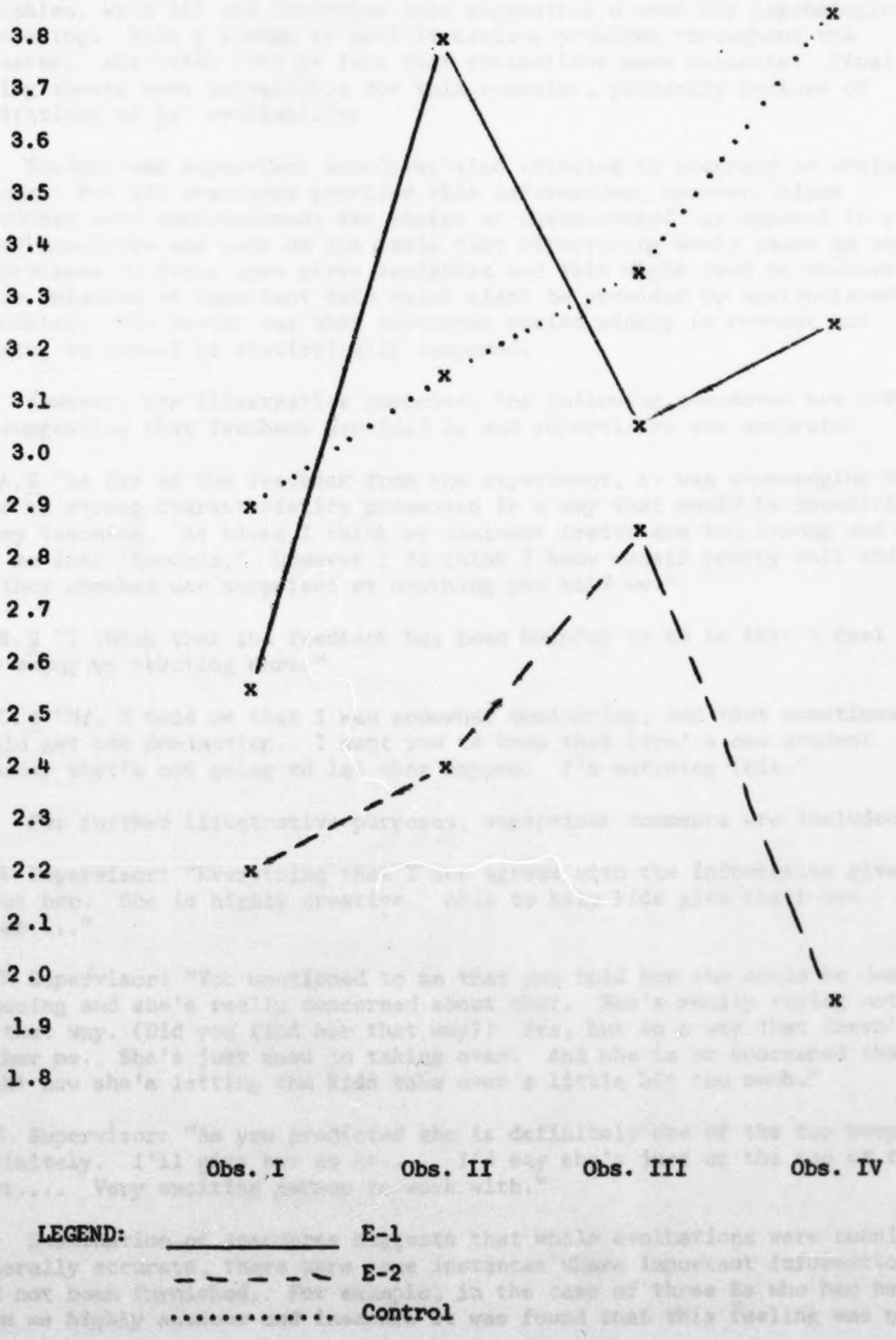


Figure 2 Mean I/D ratios, Semester II.



feedback occurred at the end of the semester. One S, a member of Group E-2, completely rejected the examiner's evaluation. This evaluation suggested that S was low on a majority of CPI variables, highly variable on EPPS variables, with TAT and interview data suggesting a need for psychological counseling. This S proved to exhibit serious problems throughout the semester. All other (44) Ss felt that evaluations were accurate. Final rating sheets were unavailable for this semester, primarily because of limitations of Ss' availability.

Student and supervisor anecdotes also attested to accuracy of evaluations. Not all anecdotes provided this information, however, since anecdotes were unstructured; the choice of unstructured as opposed to structured anecdotes was made on the basis that structuring would cause Ss and supervisors to focus upon given variables and this might tend to obscure or cause omission of important data which might be provided by unstructured anecdotes. The result was that anecdotes varied widely in content and length, so cannot be statistically compared.

However, for illustrative purposes, the following anecdotes are offered as suggesting that feedback provided Ss and supervisors was accurate:

A. S "As far as the feedback from the experiment, it was encouraging to hear my strong characteristics presented in a way that would be beneficial to my teaching. At times I think my dominant traits are too strong and may get me into 'trouble.' However I do think I know myself pretty well and was neither shocked nor surprised at anything you told me."

B. S "I think that the feedback has been helpful to me in that I feel I can enjoy my teaching more."

C. S "Dr. X told me that I was somewhat dominating, and that sometimes could get too dominating. I want you to know that here' s one student teacher that's not going to let that happen. I'm watching this."

For further illustrative purposes, supervisor comments are included:

A. Supervisor: "Everything that I see agrees with the information given me about her. She is highly creative. Able to help kids give their own ideas...."

B. Supervisor: "You mentioned to me that you told her she could be domineering and she's really concerned about that. She's really trying not to be that way. (Did you find her that way?) Yes, but in a way that doesn't bother me. She's just used to taking over. And she is so concerned that right now she's letting the kids take over a little bit too much."

C. Supervisor: "As you predicted she is definitely one of the top people. Definitely. I'll give her an A+.... I'd say she's just on the top of the list.... Very exciting person to work with."

Examination of anecdotes suggests that while evaluations were considered generally accurate, there were some instances where important information had not been furnished. For example, in the case of three Ss who had been seen as highly anxious and insecure it was found that this feeling was not a long-term characteristic but had been the result of unfortunate experiences in pre-student teaching laboratory activities. For these individuals it would have been helpful to have had more extensive educational histories; one recommendation to come out of this study is that extensive anecdotal information based upon prior experiences in the elementary education sequence be provided supervisors of seniors in student teaching.

2. Relation of evaluation information to observed overt behavior.

Two kinds of information attack the question of the relationship of evaluation information to observed behavior. Table 14 shows the number of significant correlations found among EPPS test results and card sorts of students, supervisors, and examiner. Each of the 15 EPPS variables was studied separately. Thus Table 14 shows the number of correlations significant at the 5% level of correlations found out of 15 significant correlations which might be possible. E_1 and E_2 refer to Ss' scores on the pre- and post-test EPPS. S_1 and I_1 show self and ideal self sort correlations, based on EPPS variables, prior to student teaching. S_2 and I_2 represent similar data for post-student teaching card sorts. O refers to an average of the card sorts of the supervisor and examiner; RT refers to the examiner's card sort prior to student teaching, based on test and interview results; RA refers to post-student teaching examiner's card sort, based on student and supervisor's anecdotes; and Su refers to supervisors' post-student teaching card sort based on observation of S. Information was available only for second semester Ss, since pre-teaching card sorts were not available for first semester Ss. The number of Ss in each group was 15; the total correlations are based on 45 Ss.

Actual correlations will not be reproduced since the size of the sample was small, hence the precise values of the correlations could not be taken as meaningful.

It is seen that for the total group that the examiner, RT, was able to achieve significant correlation with initial EPPS test results in 15 out of 15 possible correlations, i.e., all 15 variables were card-sorted essentially as the test scores themselves suggested. This is not surprising, since the examiner had access to EPPS data prior to card-sorting. However, it should be noted that the examiner also had access to CPI, TAT, and interview data in assessing Ss' personalities, and that these data might well militate against significant correlations of card sort and EPPS, especially if various kinds of data were somewhat contradictory.

It is seen that for the total group, RT attained 12 significant correlations with S_1, suggesting that the examiner's initial description of S tallied well with the way S saw himself.

Fewer significant correlations were obtained when experimental and control groups were considered separately.

It may also be seen that Ss' pre- and post EPPS test were significantly correlated in regard to a majority of variables, and that Ss' card sorts were also correlated significantly in regard to many variables; however, although card sorts were based on Edwards' descriptions of variables, fewer significant correlations were obtained between EPPS scores and card sort scores.

TABLE 14

NUMBER OF STATISTICALLY SIGNIFICANT r's AMONG EPPS AND CARD SORT DATA, SECOND SEMESTER ONLY

(15 significant r's possible)

Total Group
N = 45

	E_1	E_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
E_1		15	12	6	14	11	11	15	7	3
E_2			13	8	15	12	8	14	4	3
S_1				15	15	12	10	12	6	5
I_1					12	14	4	4	2	2
S_2						15	8	10	6	6
I_2							6	6	4	3
0								13	15	15
RT									6	3
RA										10
Su										

E-1
N = 15

	E_1	E_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
E_1		13	11	4	11	5	8	13	2	0
E_2			5	4	13	6	3	8	1	1
S_1				9	14	8	4	7	2	2
I_1					8	10	2	3	2	2
S_2						9	4	7	3	3
I_2							2	1	3	1
0								6	9	13
RT									2	2
RA										3
Su										

E-2
N = 15

	E_1	E_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
E_1		15	5	3	3	4	6	10	4	0
E_2			4	5	7	4	6	7	2	2
S_1				5	9	7	3	3	3	1
I_1					6	11	3	3	0	2
S_2						8	1	3	0	2
I_2							1	1	0	1
0								8	11	15
RT									4	4
RA										5
Su										

Control
N = 15

	E_1	E_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
E_1		11	3	4	4	1	1	9	0	0
E_2			7	5	6	1	2	7	2	0
S_1				10	11	5	5	4	3	0
I_1					4	5	2	2	1	0
S_2						8	3	3	0	3
I_2							1	0	2	1
0								9	11	15
RT									3	1
RA										7
Su										

Table 14 also shows the correlations of supervisors' card sorts with all other sorts and test scores. It is seen that supervisors were unable to produce many significant correlations with test or other card sort data. This may be interpreted as suggesting that supervisors did not well understand personality characteristics of their students; it can also be suggested that behavior observed did not seem to reflect personality variables as assessed by tests and card sorts. A third possibility, namely, that of supervisor variability is attacked in another study already referred to.

The examiner sorts based upon anecdotes also failed to produce many significant correlations with students' card sorts and test results. A failing in anecdotes, and a problem of relating observed behavior to test data is evident. It is of interest that the examiner sorts did not correlate highly with supervisor sorts.

For the total group of Ss it is seen that there is considerable stability in the ways they view themselves. E_1 and E_2, S_1 and S_2, and I_1 and I_2 correlate well with each other; Ss as a whole are also seen as self acceptant, shown by correlations of S_1 and I_1 and S_2 and I_2.

It is probable that the small sample size of experimental and control groups accounts for the relatively fewer significant correlations found among them.

Table 15 presents similar data in regard to CPI variables, of which there are 18. Card sort items were based on descriptive statements in the Manual, but could not be as clearly related to actual test data as in the case of the EPPS. It is seen that test results remained highly similar, as evidenced by significant correlations of variables; these, however, were not closely related to card sort data, which did correlate well among themselves. Supervisors and examiner were unable to produce card sorts which correlated well with any other data.

Thus it may be argued that card sorts of examiners and supervisors based upon anecdotes did not relate clearly to those based upon test results (examiner, student, actual test data). A number of hypotheses have been advanced to help explain this finding.

The relation of personality data to overt behavior may also be studied via student and supervisor anecdotes. Table 16 portrays data obtained from these sources. "Development" as construed for purposes of this table refers to students who were seen by the examiner as essentially competent, healthy individuals, who needed primarily to improve their competencies rather than to change their characteristics. "Change" refers to Ss who were thought to have serious deficiencies which should be overcome or characteristics which should be changed. There were a few instances in which a given S might be considered essentially highly competent, but in which some change was recommended; an example is the S referred to in anecdotes above who was thought to have a need to play down the trait of dominance, but who otherwise was considered outstanding.

It is seen that the number of recommendations for "development" or "change" does not substantially differ among the experimental and control groups.

TABLE 15

NUMBER OF STATISTICALLY SIGNIFICANT r's AMONG CPI AND CARD SORT DATA, SECOND SEMESTER ONLY.

(No. significant r's)

Total Group
N = 45

	C_1	C_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
C_1		18	8	3	7	1	6	6	5	2
C_2			9	3	7	1	7	7	6	6
S_1				13	18	9	8	7	3	2
I_1					11	12	1	3	1	0
S_2						13	5	9	4	2
I_2							2	1	0	1
0								15	16	18
RT									11	5
RA										6
Su										

E-1
N = 15

	C_1	C_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
C_1		16	4	2	2	2	2	3	3	1
C_2			5	2	3	2	2	2	1	2
S_1				8	10	3	7	5	1	4
I_1					8	7	2	3	3	1
S_2						9	3	7	1	2
I_2							1	0	1	1
0								11	8	17
RT									4	2
RA										4
Su										

E-2
N = 15

	C_1	C_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
C_1		14	3	2	4	1	2	5	2	1
C_2			4	3	3	2	3	5	4	1
S_1				1	12	1	3	4	4	3
I_1					3	5	0	3	1	0
S_2						3	6	6	2	1
I_2							0	0	2	1
0								12	14	17
RT									4	2
RA										5
Su										

Control
N = 15

	C_1	C_2	S_1	I_1	S_2	I_2	0	RT	RA	Su
C_1		13	1	2	3	1	1	0	2	1
C_2			3	2	5	2	2	1	4	1
S_1				12	15	5	3	2	2	2
I_1					7	5	0	0	0	0
S_2						6	1	1	2	1
I_2							1	1	1	1
0								11	13	18
RT									3	1
RA										3
Su										

Table 16 also portrays the instances of agreement of the supervisor, via anecdotes, with the needs for changes or development recommended by the examiner. Thus if there was substantial evidence that the supervisor agreed with the statements of the examiner, this was tallied. However, there were instances where the supervisor disagreed--wholly, or in part-- and this was tallied in the disagree column.

It is seen that for Groups E-1 and Control that there was substantial agreement of supervisor anecdotes with statements and recommendations of the examiner. However, for Group E-2, there was not only evidence of substantial agreement, but also for 14 of the 25 Ss a substantial amount of disagreement. The reason for this group having more cases where supervisors disagreed with the examiner cannot be stated, other than to hypothesize that characteristics of these Ss were such that this happenstance occurred.

Illustrations of "development" as recommended by examiner and noted as a need by supervisor are as follows:

A. Examiner: "X will make a creative teacher, flexible, pupil-centered, and efficient. She is accepting, intuitive, and understanding. Highly motivated, but has no need to dominate and would consider their feelings. Is sympathetic, nurturing. Needs to be challenged. Should be one of our best."

Supervisor: "I see her as one of my top students. She's just thrilling to see. The way she can implement the ideas of the children right on the spot in part of a lesson without losing the thread of the lesson is excellent. She wraps it all up, uses it, and capitalizes upon what they come up with in a way I haven't seen people with lots of experience do. I am very excited about her. She will have the highest recommendation I can give her."

B. Examiner: "A very enterprising, highly motivated, capable person. Can be creative and is strong leader. Will stimulate children and be well-liked by children, parents, and staff.... On the whole, a person with strong potentials. I anticipate fine success."

Supervisor: "I can't see any problems. She's the kind you can get a lot accomplished with because you don't have a lot of other things to get through first. I thoroughly enjoy her."

Illustrations of "change" as recommended by the examiner and seen by the supervisor as necessary are as follows:

A. Examiner: "X is very reserved, somewhat negative, and defensive. She is cautious, aloof, and withdrawing. She does not make a good impression. She knows this, and her threat makes her rigid, inhibited, and over-controlled. She has underlying frustration and anger. Would like praise and support but finds it difficult to relate well enough to receive this. May have troubles with motivation, discipline, relations with others. May need much support, direction."

Supervisor: "I think it's a matter of whether she can take it on her own, now that the teacher has withdrawn her support. She's bright, and sensitive. And has a lot to offer as a teacher if she can just realize that she does."

B. Examiner: "X seems rather passive and lacks social presence; insecure in social situations.... Does not push herself and fails to make a strong impression. At the same time, has a feeling for others and would like to be helpful. Tends to lean on others. Probably likes suggestions and considerable reinforcement and feedback. ...Problems to lie in the area of lack of forcefulness and initiative. ...Might be quite directive and over-organized, the result of lack of security. May have discipline problems; possibly too dependent upon her cooperating teacher."

Supervisor: "...is the one who has diabetes, and very little security.... She said, 'I'm just not open with anybody. I'm quite shy and it takes me a long time to get a sense of security in what I'm doing.' ...So she's got a long way to go and she's aware of it and is beginning to be able to accept the fact and is not discouraged."

Student anecdotes also provide some insight as to the relationship between examiner's findings and overt behavior. These were not tabulated, however, because of the extreme variability in length and kind of content they provided. However, illustrations show that some students did provide such evidence:

A. Examiner: "She might tend to wait for directions or to seek frequent help, rather than to take over. She is probably dependent upon the cooperating teacher."

Student: "I feel I could have accomplished more during this period if she would have given me more specific direction in my work, especially when I made a point of asking her for help and definite direction."

B. Examiner: "May have troubles--motivation, discipline, relations with others. Needs much support and direction. Spend some time helping her develop creative lessons. Don't place her on her own too soon."

Student: "We also discussed discipline and how my ability to keep discipline was improving. ...Suggested that I might do my best teaching in first grade because of my manner with the children."

TABLE 16

AGREEMENT OF EXAMINER AND SUPERVISOR ANECDOTES.

Group	Recommendations		Supervisor Anecdotes	
	Develop.	Change	Agrees	Disagrees
E-1 (N=25)	11	16	22	6
E-2 (N=25)	14	17	24	14
Control (N=25)	12	14	21	6

χ^2 (agrees vs disagrees) = 3.710 NS

3. Use of evaluation data and recommendations by the supervisor.

TABLE 17

USE OF EVALUATION DATA AND RECOMMENDATIONS BY SUPERVISORS BASED ON SUPERVISOR ANECDOTES.

Group	Evid. of work by supervisor	Evid. of Dev.	Evid. of Change	Evid. of No Change
E-1 (N=25)	16	11	7	5
E-2 (N=25)	11	13	11	3
Control (N=25)	11	11	10	4

χ^2 (work vs no work) = 2.666 NS

χ^2 (devel.) = .900

χ^2 (change) = 2.662

Table 17 presents data from supervisor anecdotes, in which evidence of work by supervisors with students in regard to examiner recommendations is listed, and in which evidence of development, change, or failure to change by the student is presented. No statistically significant changes, development, or failure to change were found. However, supervisors working with Group E-1, on whom they received feedback, are seen to work on recommendations with 16 students, compared to 11 students in Group E-2 and 11 in the Control Group.

It is apparent that experimental treatment produced no differences among groups detectable in anecdotal records of supervisors.

Illustrations of evidence of work in regard to recommendations follow:

A. Examiner: "X needs support and direction. May have troubles with motivation, discipline, relations with others. Spend time helping her develop creative lessons. Don't place her on her own too soon."

Supervisor: "Her teacher is now gradually withdrawing support and is trying to put her on her own more and more. Her feelings are that X is terrified of supervision and isn't really afraid of me as a person, but the idea of a supervisor coming in." and, "Her teacher is giving her so much support and security and help that X tells me over and over how happy she is there and how wonderful her teacher is and how well things are going."

B. Examiner: "X needs to stand on her own, and to develop her own ideas and evaluate things in her own way. She needs to work on flexibility, creativity, and to find ways to motivate children. If she can gain some success, and pay attention to the needs of children she will probably become a standard teacher."

Supervisor: "I would agree with this leaning on others, and liking suggestions. And her discipline--I think she has a long way to go. I'm going to try to push her and see what happens. I can't lose anything. I'm not gaining anything by being supportive."

It was originally felt that social learning theory principles should be suggested and that supervisors might try them in regard to their students. It was also felt that counseling might be instituted by supervisors in the sense of discussing students' problems with them, and helping them see some of the reasons for these problems and what they might do to improve. However, anecdotes seem to suggest that supervisors proceeded according to their own established patterns. One supervisor, trained in client-centered counseling, employed this approach entirely. Another supervisor was completely content and method-oriented, and persisted in criticizing in these areas. The other three supervisors appeared to assume the roles of evaluators and resource persons. It cannot be said from data obtained in this study that supervisory methods changed, although there was evidence that supervisors accepted and worked with the areas recommended by the examiner for attention.

D. Use made by students of examiners evaluations.

Table 18 presents evidence from students' anecdotes of changes made in accordance with the examiners' recommendations, and of evidence of attention to such recommendations.

TABLE 18

EVIDENCE OF STUDENT WORK IN AREAS RECOMMENDED BY EXAMINER, AND EVIDENCE OF DEVELOPMENT OR CHANGE.

Group	Evid. of work	Evid. of Develop.	Evid. of Change
E-1 (N=25)	15	11	8
E-2 (N=25)	19	13	13
Control (N=25)	9	13	10

χ^2 (work vs no work) = 8.285 $p < .05$

χ^2 (develop.) = 1.748

χ^2 (change) = 2.836 NS

It is seen that Ss in Groups E-1 and E-2 showed significantly more evidence of work on areas recommended by the examiner than the Control Group, which received no feedback until after student teaching. Illustrations of such evidence are as follows:

A. Examiner: "X's problems, if any, may be in failure to be patient and understanding of the slower or less outgoing children. She may have a tendency to be the center of the stage. We may need to help her learn to be patient and to study pupils, rather than simply to feel for them."

Student: "It was exciting to hear someone else confirming what you suspected about yourself. The way in which this feedback was helpful was that it emphasized certain traits and thus made me *more aware* of them than I otherwise would have been. For example, the fact that I am a demanding person and realize this may influence my teaching accordingly. I would hope that if I was expecting a bit too much of the children I would be able to recognize this, and knowing that I did have a tendency to push too hard at times might set my goals a little lower."

B. Examiner: "...May have problems in planning, getting work done on time, routine, etc., including detail, but can be creative and stimulating. Because she seems competitive will be interested in how she is viewed by others. Watch to see that she pays attention to children's needs and contributes to routine such as planning. Don't let her dominate children. Challenge her--she may be easily bored."

Student: "I feel that my strengths include being able to perceive needs of children, establishing a free atmosphere, providing adequately for pupil participation and initiative and being able to present activities in a clear and meaningful manner. I feel my main weakness is becoming bored with subjects that I am not fond of. However, I'm quite aware of this and make every effort to alleviate it. I feel that I've improved in giving directions. I've concentrated on slowing down my speaking...."

Thus in summation one can find definite anecdotal evidence that students who received immediate feedback and recommendations were sensitive to these recommendations and were willing to work on correcting deficiencies noted.

E. Problems met in this study.

This study was conceived of as a pilot study, and although certain problems were anticipated and attempts made to solve them in the design, many other problems arose which would affect planning of future studies of this kind. Evidence from anecdotal records of both students and supervisors, from informal conversations with supervisors and/or students, and from other kinds of data pointed out difficulties which militated against the research and supervision desired. These problems will be briefly discussed under various categories.

1. Design of the experiment.

Since the experiment dealt with data collected in the field as opposed to the laboratory, precise control of a number of factors could not be maintained. Accordingly, randomization of *Ss* as to experimental and control group and as to supervisor was *attempted* in hopes that no systematic bias would enter into treatment and data. It was clear, however, as the experiment progressed that randomization did not fully achieve its purpose. It was felt that feedback in regard to 1/3 of the *Ss* in Group E-1 would provide supervisors with additional means of *working* with those *Ss*. However, it became apparent from supervisory anecdotes that *supervisors* were attempting to view all *Ss* partly from the view of personality attributes. Further, some *Ss* in Group E-2 relayed personality information findings to their supervisors, thus introducing an element of bias. For future studies it would be desirable to have larger groups of Ss, in which less contamination of feedback and treatment resulted; this could be largely eliminated by having enough supervisors so that groups need not be split evenly among them.

2. Supervisor bias.

There was systematic bias among supervisors, and although the experimental and control Ss were evenly divided among them, the biases continued to obscure some data. For example, one supervisor was oriented to a Rogerian approach in counseling Ss, hence employed this approach regardless of whether she had feedback and recommendations on some Ss or not. Her philosophy did not extend to trying to change Ss in any way, so that any changes were the result of S's self evaluation. Another supervisor attended completely to method and content in teaching, and did little to implement examiner's recommendations. The difference between supervisors is being explored in Thelen's study, now underway.

Other supervisory problems existed. For example, it was found that supervisors were unable to deal with the Flanders interaction analysis process as adequately as desired and at the same time try to observe S in order to evaluate the student's teaching. It is probable that the use of interaction analysis processes should be made by persons other than student teaching supervisors. In addition, only four supervisory visits were scheduled and supervisor effect was therefore somewhat curtailed.

Since the development of rapport between the supervisor and S was of critical importance to the supervisory relationship, the supervisor sometimes found very difficult choices to be made in how information about the S would be employed. Many Ss felt threatened by supervisory visits and required more support and non-critical comments than might otherwise have been made.

It was apparent that not enough supervisory time was provided; it was also apparent that training of supervisors in the use of social-learning theory principles was inadequate. That is, supervisors were unable to effect as significant changes in student behavior as might have occurred had more time and training been available.

The time element also produced problems in the sense that the total time provided for change was probably too short; further, the kind of information and supervisory activities provided in this study appear to be more desirably introduced at a period earlier in S's teacher-training program.

3. Classroom variables.

Classes varied widely as to socio-economic status of pupils, ages, grade levels, intellectual abilities, and disciplinary problems. It seemed clear from student and supervisory anecdotes that the activities of S may have been governed more by the immediate classroom (perceived) situation than by S's own philosophy, abilities, personality attributes, or by supervisory activities.

The cooperating teacher was seen as a crucial problem. In some instances Ss were not allowed to "be themselves." In other instances the cooperating teacher acted in contradiction to the efforts of the supervisor. The cooperating teacher, as a model, varied widely; she also differed widely in philosophy, methods of evaluating and advising S, in time permitted for S to teach, and in general manner of managing her classroom.

4. Student teacher variables.

Not all Ss were amenable to trying to demonstrate "indirect" classroom control. Their willingness to participate in this part of the experiment varied, and their abilities to set up meaningful discussions to be observed differed.

Ss also differed in regard to receptivity of supervisors. Typically the Rogerian-oriented supervisor was regarded as inadequate at the beginning visits, but highly lauded in later visits as students learned to employ self evaluations. One supervisor was soundly criticized for tardiness, absence from scheduled visits, and other lacks or commissions. This supervisor appeared to be quite ineffective throughout the entire student-teaching period.

5. Data collection.

Considerable data which would have been valuable to the superviosr and examiner were not collected. Data which were collected seemed accurate and useful, but it was clear from student and supervisor anecdotes that information of importance was not obtained. For example, some highly anxious Ss were found to be in this state because of traumatic pre-student teaching laboratory experiences. One S, thought originally to be passive and unmotivated, was later found to be suffering from a severe case of diabetes, with resulting low energy level. Problems in data related to lack of information, rather than to incorrect information, and it was apparent that extended histories of Ss would have helped clarify some of the problems noted among Ss.

The anecdotal record of S and supervisor was unstructured by design since it was felt that freely given information might produce data which otherwise would not be reported. This was indeed found to be the case. However, certain areas vital to the study did not receive adequate attention from some Ss and supervisors. Records were of unequal length and provided highly differing kinds of information. It is probable that a more structured anecdotal record would be desirable in the future.

9. Conclusions and Implications.

The following questions were asked in this study:

1. How do personality variables change among experimental and control Ss from one evaluation to the next?

2. How does Flanders' I/D ratio change for Ss from one observation to the next for experimental and control groups?

3. In what ways does the supervisor utilize personality information available to him concerning student teachers?

4. In what ways does the student teacher utilize personality information concerning himself?

5. What problems exist in regard to personality evaluation and counseling of this type?

We shall consider the findings and possible implications for each question separately.

1. Concerning changes in personality variables among groups and individuals, it was found for EPPS and CPI variables that test, groups, and group x test effects were not statistically significant. It may be argued that the relatively small size of the sample and the relatively low degree of homogeneity were important determining factors.

However, when differential recommendations concerning Ss, made by the examiner, were studied, it was found that for second semester Ss and for both semesters combined, Group E-1, in which student and supervisor both received feedback and recommendations produced more recommended changes on the CPI, although this was not true for EPPS variables. Further, changes deemed desirable, although not recommended by the examiner, attained significance for this group at the 5% level on the CPI, although not on EPPS variables.

Card sort data based on EPPS and CPI variables showed stability of self and ideal self ratings of all groups of Ss between administrations, as evidenced by the number of significant correlations found.

It is seen that CPI data, representing behavioral descriptions, was subject to change; EPPS data, however, are based on self report of needs which seem less amenable to change. Since Group E-2, in which students but not supervisors received feedback, no significant changes were found, and since control groups Ss did not change significantly in regard to recommendations, it may be argued that supervisors and students should both be aware of and accept recommendations for change if such change is to be accomplished.

One implication that seems to emerge is that in counseling or supervisory situations, there must be awareness on the part of both supervisor and student of what areas must be worked upon. If this does not occur, supervisor and student may work at cross purposes, or fail to attend to important areas of concern. If practices referred to in this study were to be further studied or routinely administered, provision for feedback might well be made to supervisor, student, and very possibly the cooperating teacher.

2. The use of the Flanders interaction analysis process was not successful in this study. Problems arose in regard to comparability of discussion sessions observed; reliability of observers; requirement of observers to record data and yet to later evaluate the student teachers' performance; the philosophy of supervisor and/or student teacher and cooperating teacher concerning indirect control; the time required for such observations; and time required for supervisors to attempt to initiate change.

It is recommended that the Flanders technique be employed for future studies or supervision by others than the supervisors, and that it be used for explaining to the student teacher the various aspects of his teacher-pupil discussion session; thus teaching, rather than research purposes, should dictate the use of this instrument.

3. It was seen from anecdotes of supervisors that there was considerable agreement between supervisors and examiner concerning Ss' attributes and needs for improvement, but that this agreement did not differ significantly between experimental and control groups. It was also found that although supervisors tended to work somewhat more with recommendations for Group E-1, no statistically significant changes were apparently effected for this group as compared to other groups. Anecdotal information suggested that supervisors tended to continue their orientations, e.g. Rogerian, content and method oriented, or eclectic, and did not seriously employ social learning theory principles in dealing with Ss.

These findings are related to another problem, namely, that of supervisor-student rapport. It is felt by the researchers that since the development of such rapport is of crucial importance to the supervisory relationship, there may be many times when problems arise concerning the use of feedback supplied to the supervisor by the examiner. This seems especially true in this study in regard to several Ss who had had traumatic pre-student teaching laboratory experiences.

Among the implications of these findings are the suggestion that the supervisor, himself, might well need to explore his own attributes and orientations toward personality and change. It seems clear, also that evaluation and feedback such as were employed in this study require that the supervisor be given extended training in the use of social learning theory principles. Further, it might be beneficial for work with Ss to begin earlier in their teacher-training sequences, and for supervisors to have more time to supervise them both at an earlier period and during the senior year.

It was also clear that anecdotal records, being unstructured, were inadequate in some instances. It is suggested that for future studies, semi-structured devices be employed in order to pull out information which was not always reported, but that room be left for free, unstructured comment in addition to required information.

4. It was seen for Groups E-1 and E-2, where students, and students and supervisors received feedback, there was significant evidence of students working in areas of examiner's recommendations as compared to Ss of the control group. However, there was no statistically significant evidence of development or change which differentiated one group from another. From these findings and from findings reported previously in regard to the CPI and supervisory anecdotes, it seems evident that in some instances supervisors attempted to work in areas of examiner's recommendations, and that in other instances students attempted such activity; however, significant results were obtained only when students and supervisors attempted work in the areas of recommendations.

Recommendations, then, seemed plausible. Implementation, however, did not live up to hopes. Reasons will be advanced in the discussion of problems met, which follows.

5. Problems encountered included difficulties in control of important variables. Such control was attempted through randomization of Ss among supervisors, by experimental groups. However, it was felt that supervisors tended to view Ss from the standpoint of personality variables, except in the case of one content and method-oriented supervisor, and hence there was spill-over or contamination as a result. Further, some Ss in Group E-2 conveyed feedback information to their supervisors.

A second problem encountered was that of supervisor bias, in that not all supervisors possessed the same counseling orientations, and not all supervisors felt philosophically that they should attempt to change Ss behaviors. It was also found that supervisors attained varying degrees of acceptance from Ss, and were variously effective as a result.

Pupil and cooperating teacher variables also contaminated this study. Some Ss did not feel free to "be themselves" in their classrooms; in some instances, e.g. work with slow learners, it was difficult to employ an indirect approach.

It was also clear that the examiner's evaluation would have been enhanced by anecdotal information in regard to S's teacher training sequence; some Ss were highly threatened, due to previously unfortunate experiences. Other Ss were in ill health, poor mental health, or had personal problems which interfered with classroom functioning.

It can be said in generalization that evidence was found to suggest that the provision of personality information and recommendations to student teachers and supervisors was useful, but that many variables intervene to affect ways this information was utilized and hence its effectiveness.

Among recommendations which can be made are the following:

a. There seems to be need for providing the teacher education candidate with personality information and counseling well in advance of student teaching, to thus provide opportunity for self evaluation and change under conditions of less pressure than afforded in student teaching. It seems clear that change requires both desire and sufficient time; this might be provided with earlier evaluation and counseling.

b. There seems to be need to more extensively train supervisors in the use of student teacher observation, the meaning of personality and behavioral characteristics and information, and ways of dealing with the student teacher for needed change. It also seems desirable to focus upon a clear, common philosophy of education and teaching. When efforts are not made to focus the students' attention toward needed changes, these do not occur. Whether supervision can be effective without evaluation and attempts to counsel and to reinforce change is debatable.

c. Related but uncontrolled factors such as the classroom, cooperating teacher, time factor, and others must be considered in working with the student teacher. It seems likely that efforts must be extended further to carefully place the student teacher in a situation conducive to the kinds of changes felt desirable by supervisors and student. It is also probable that cooperating teachers should receive a certain amount of training in supervision, counseling, or other ways of working with the student teacher, and that some common agreement between supervisor, student teacher, and cooperating teacher must be sought.

d. More adequate anecdotal information should be available before student teaching; anecdotal information collected during supervision needs to be systematized and reduced to a series of common dimensions if the work of supervisors is to be adequately coordinated.

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Appendix A

Sample Student Evaluation

Lois
Oct. 14, 1964

Interpretation of Test Results

Lois comes from Kaimaki high school in a suburb of Oahu. She was in the YWCA, school newspaper, Sweethearts' Ball, and similar activities. She attended the University of Hawaii for two years, in Education. She then transferred here, in Occupational Therapy. However, she learned from a Chicago relative that OT was limited in opportunity, so almost accidentally changed to elementary education. Her father is a doctor and her mother a nurse. She has a fiancee who will be in medical school, so will teach about six years.

At the interview, Lois was quiet, attentive, sympathetic, and appeared quite trusting.

The IPAT shows Lois to be low in anxiety. The California Psychological Inventory shows her low in dominance, social presence, psychological mindedness, and quite low in capacity for status, with all scores but achievement by independence falling below the 50th percentile. She would appear, then, as retiring, inhibited, avoiding situations of tension or decision, lacking in self-confidence, and as uneasy in unfamiliar social situations, shy, and mild. She would be seen as self-restrained, literal and unoriginal, and patient, conservative, quiet, and passive. Her very low Py score would cause her to seem serious, cautious, unassuming, overly conforming, and peaceable.

The EPPS shows Lois to have a high need for deference, a high need for abasement, and for nurturance, or helping others. She has a low need for exhibition and for dominance, and fairly low needs for heterosexuality and autonomy.

The TAT echoes what was seen above. She is passive, conforming, feels that she must fulfil an obligation of obtaining an education but is not deeply interested in so doing. She seems quite unimaginative, and stresses a "Puritan" concept of life, although the striving reflected seems only in that school is a way of staying out of the fields.

Lois is, then, passive, conforming, self-abasing and deferring, self-restrained, quiet, and entirely non-dominant. This may be the result of the Oriental concept of womanhood, altho her mother is a nurse and father a doctor. I would expect her to be very dependent in the student-teaching situation, to lack color and strength, to be non-stimulating, to have disciplinary problems, and lack insight into pupils' behavior. She needs to be caused to stand on her own feet, but this will be difficult. She needs support, and reassurance. Except with small children, she may have many problems.

Appendix B

Items for Card Sort, Based on EPPS Variables.

Achievement

1a - I like to accomplish tasks requiring skill and effort.

1b - I like to do a difficult job well.

1c - I like it when I am among the best at a task.

Deference

2a - I like to get suggestions from others.

2b - I usually defer to the ideas of others.

2c - I am happy to accept the leadership of others.

Order

3a - I prefer to make plans before starting on a difficult task.

3b - I like to keep things neatly and orderly.

3c - I prefer it when things are arranged so that they run smoothly without change.

Exhibition

4a - I like to be able to say witty and clever things.

4b - I like to talk about personal adventures and experiences.

4c - I like to be complimented on how I look or about my clothes.

Autonomy

5a - I like to be independent of others in making decisions.

5b - I prefer to avoid situations where I am expected to conform.

5c - I like to do things without worrying about what others think.

Affiliation

6a - I like to participate in friendly groups.

6b - I want to make as many friends as possible.

6c - I prefer to do things with friends rather than by myself.

Intraception

7a - I like to analyze my motives and feelings.

7b - I prefer to judge people by their motive rather than by their actions.

7c - I like to analyze the behavior of others.

Succorance

8a - I like it when others provide help when I'm having troubles.

8b - I like people who understand and sympathize with my personal problems.

8c - I like to feel I am receiving affection from others.

Dominance

9a - I like to argue for my point of view.

9b - I like to be a leader in groups to which I belong.

9c - I like to supervise and direct the actions of others.

Abasement

10a - I feel that I should accept the blame when things do not go right.

10b - I feel a sense of guilt when I've done something wrong.

10c - I feel better when giving in and avoiding a fight than when I get my own way.

Nurturance

11a - I like to help friends when they are in trouble.

11b - I like to show a lot of affection toward others.

11c - I like people to feel they can confide their problems to me.

Change

12a - I like to do new and different things.

12b - I like to experience novelty and change in daily routine.

12c - I'd like to move about the country and live in different places.

Endurance

13a - I like to keep at a job until it is finished.

13b - I like to complete any job I have undertaken.

13c - I like to stick at a problem even though it may seem to be getting nowhere.

Heterosexuality

14a - I like to go out with men.

14b - I like to engage in social activities with men.

14c - I like to be regarded as physically attractive by men.

Aggression

15a - I like to attack contrary points of view.

15b - I like to place the blame where it belongs when something goes wrong.

15c - I don't mind criticizing others when they deserve it.

Appendix C

Items for Card Sort, Based on CPI Variables.

Dominance	1a - I am usually one of the leaders in group activities.
	1b - It is easy for me to come up with ideas and novel ways to do things.
	1c - It is easy to persuade people to follow a good idea.
Capacity for Status	2a - I consider myself resourceful and versatile.
	2b - I can communicate effectively.
	2c - My interests cover a wide range.
Sociability	3a - I have an outgoing personality and would be considered an extrovert.
	3b - I am competitive in school or in sports or social life.
	3c - I feel my thinking is often original and enterprising.
Social Presence	4a - I can meet most situations with poise.
	4b - I am self confident in most situations.
	4c - I have an informal and expressive nature.
Self-Acceptance	5a - I consider myself to be quite outspoken.
	5b - I feel capable of thinking and acting on my own initiative.
	5c - I seldom feel a sense of inferiority when with others.
Sense of Well-Being	6a - I seldom doubt my own ability to do things.
	6b - Things mostly go the way I'd like them to go.
	6c - I seldom worry much.

Responsibility

7a - I am conscientious about what I do.

7b - I am the kind of person often described as dependable.

7c - I have a good sense of responsibility for whatever I undertake to do.

Socialization

8a - I always try to be completely honest.

8b - I am sincere in what I say.

8c - I am a steady, serious type of person.

Self-Control

9a - I like to be calm and deliberate.

9b - I like to be thoughtful and feel I am in control of myself.

9c - I like to see thoroughness in my own work and in others.

Tolerance

10a - I feel everyone is entitled to his own beliefs.

10b - I am tolerant.

10c - I try to accept people as they are.

Good Impression

11a - I am very cooperative when working with a group.

11b - I am a very sociable person.

11c - It's important to me to have people like me.

Communality

12a - I can usually view things very realistically.

12b - I have a good deal of patience.

12c - I am moderate in most of my attitudes and activities.

Achievement via Conformity

13a - I am persistent and industrious.

13b - I value intellectual activity and intellectual achievement.

13c - I am efficient in a cooperative venture.

Achievement via Independence	14a - I feel I am independent and self-reliant.
	14b - I feel I have good intellectual ability and judgment.
	14c - I think of myself as having a mature and rather strong personality.
Intellectual Efficiency	15a - I consider myself resourceful and well-informed.
	15b - I am capable of clear-thinking intelligent handling of situations.
	15c - I can do an efficient, thorough job on most tasks.
Psychological-Mindedness	16a - I am observant and perceptive of the attitudes and feelings of others.
	16b - It is my nature to be spontaneous and changeable.
	16c - I find it easy to be responsive to the moods of others.
Flexibility	17a - I have a somewhat rebellious, adventurous nature.
	17b - I like to be doing something different for fun all the time.
	17c - I have a good sense of humor.
Femininity	18a - I am a very sympathetic person.
	18b - I appreciate the feelings of others and like to be helpful.
	18c - I am a rather gentle person.

Appendix D

Sample Student Anecdotes

Lois

Wednesday, Nov. 11.

By sending in a child who was playing around in gym class while directions were being given, I acted as if I was the authority. However, I really acted in an impulsive act of insecurity. After the child was punished and seeing him go in, I felt sorry, wishing I hadn't done it because other children were doing it, too. Being that physical education class was being held outdoors, perhaps the children did want to or did feel like playing around, invigorating atmosphere perhaps.

Friday, Nov. 13.

This noon I was up in the teachers' lounge and I think it is very disgusting how teachers gossip. I feel they should approach the principal rather than discuss a teacher's teaching among fellow teachers.

Monday, Nov. 16.

Previous to this week, I had been writing complete lesson plans out but as I find myself taking on more subjects to teach, preparation time runs short. Have sort of outlined plans for a week that can be seen at a glance. Perhaps I am becoming more confident in the teaching situation and can see the continuity in each of the subjects being taught.

Tuesday, Nov. 17.

Have talked to my cooperating teacher about my inhibited feelings while another person is around, especially my supervisor or Miss D. herself. She herself knows how I feel so she has told me not to worry about it but to just be myself. Here is where I can understand how conflictual I feel within myself. For instance I honestly would like criticism to help me in my teaching, yet this affects me because I can't be myself. Most of the time I'm up there I wonder, "Am I trying to improve on my weak points Miss D. pointed out." It's when I have this in the back of my mind that makes the teaching situation more difficult for me.

Appendix E

Sample Supervisory Anecdotes

Lois

Lois is becoming much more relaxed while teaching. She seems more in control and command of the situation. She displays a very friendly, kind, thoughtful personality. She is most understanding and empathetic. In the observed lesson she accepted and wrote on the board all of the children's contributions. Later she asked those children who had made inappropriate contributions if she could erase them. Lois continues to be an extremely hard and energetic worker in all phases of teaching.

Again Lois showed that she has excellent rapport with children. She couldn't be kinder or more sympathetic to children than she is. She never misses an opportunity to praise and encourage. Lois also continues to display much initiative and hard work. She plans thoroughly and tirelessly. Also, she took charge and "stepped-in" whenever she saw a need. She did not wait for a direction or suggestion from her cooperating teacher.

Appendix D

ANALYSES OF VARIANCE, CPI VARIABLES, COMBINED SEMESTERS
[Greenhouse and Geisser (11)]

Source	d.f.	SS	F
DOMINANCE			
Tests	1	35.29	F_1 = 19.92 NS
Groups	2	506.34	F_2 = 1.34
Indiv. (within groups)	72	13,653.16	
Group x tests	2	16.51	F_3 = .47
Indiv. x test (within groups)	72	1,275.69	
Total	149	15,486.99	
RESPONSIBILITY			
T	1	14.42	F_1 = 8.04 NS
G	2	325.08	F_2 = 1.60
I (within G)	72	7,330.56	
G x T	2	9.62	F_3 = .27
I x T (within G)	72	1,290.96	
Total	149	8,970.64	
SOCIALIZATION			
T	1	8.64	F_1 = 33.71 NS
G	2	68.66	F_2 = .25
I (within G)	72	9,712.68	
G x T	2	78.04	F_3 = 1.52
I x T (within G)	72	1,845.31	
Total	149	11,713.33	

Appendix B (Cont.)

Source	d.f.	SS	F
SELF CONTROL			
T	1	1.53	F_1 = 5.24 NS
G	2	7.44	F_2 = .003
I (within G)	72	9,259.8	
G x T	2	122.92	F3 = 2.11
I x T (within G)	72	2,100.58	
Total	149	11,492.27	
WELL-BEING			
T	1	102.0	F_1 = 5.45 NS
G	2	234.12	F_2 = .81
I (within G)	72	10,458.24	
G x T	2	146.68	F_3 = 3.92
I x T (within G)	72	1,348.32	
Total	149	12,289.36	
SOCIAL PRESENCE			
T	1	69.36	F_1 = 22.71 NS
G	2	600.28	F_2 = 1.76
I (within G)	72	12,265.56	
G x T	2	33.48	F_3 = .55
I x T (within G)	72	2,199.16	
Total	149	15,167.84	

Appendix F (Cont.)

Source	d.f.	SS	F
TOLERANCE			
T	1	116.16	F_1 = .84 NS
G	2	17.02	F_2 = .09
I (within G)	72	7,175.68	
G x T	2	389.64	F_3 = 14.16
I x T (within G)	72	990.67	
Total	149	8,689.17	
GOOD IMPRESSION			
T	1	3.84	F_1 = 13.80 NS
G	2	693.78	F_2 = 2.23
I (within G)	72	11,214.80	
G x T	2	43.00	F_3 = .77
I x T (within G)	72	2,004.15	
Total	149	13,959.57	
ACHIEVEMENT VIA CONFORMITY			
T	1	34.56	F_1 = 21.12 NS
G	2	279.16	F_2 = .94
I (within G)	72	10,702.48	
G x T	2	118.20	F_3 = 3.61
I x T (within G)	72	1,178.24	
Total	149	12,312.64	

Appendix E (Cont.)

Source	d.f.	SS	F
ACHIEVEMENT VIA INDEPENDENCE			
T	1	65.34	F_1 = 21.43 NS
G	2	43.56	F_2 = .22
I (within G)	72	7,180.84	
G x T	2	104.68	F_3 = 1.72
I x T (within G)	72	2,195.77	
Total	149	9,590.19	
INTELLECTUAL EFFICIENCY			
T	1	133.96	F_1 = 9.36 NS
G	2	41.21	F_2 = .25
I (within G)	72	5,827.68	
G x T	2	104.06	F_3 = 3.63
I x T (within G)	72	1,030.93	
Total	149	7,137.84	
PSYCHOLOGICAL MINDEDNESS			
T	1	150.00	F_1 = 3.56 NS
G	2	950.58	F_2 = 4.39
I (within G)	72	7,790.12	
G x T	2	248.92	F_3 = 2.95
I x T (within G)	72	3,037.07	
Total	149	12,176.69	

Appendix F (Cont.)

Source	d.f.	SS	F
FLEXIBILITY			
T	1	174.96	F_1 = 6.06 NS
G	2	762.42	F_2 = 1.96
I (within G)	72	14,024.92	
G x T	2	35.56	F_3 = .61
I x T (within G)	72	2,079.47	
Total	149	17,077.33	
FEMININITY			
T	1	174.96	F_1 = 3.16 NS
G	2	502.82	F_2 = 1.65
I (within G)	72	10,954.16	
G x T	2	67.96	F_3 = .61
I x T (within G)	72	3,988.07	
Total	149	15,687.97	
CAPACITY FOR STATUS			
T	1	2.94	F_1 = 10.57 NS
G	2	34.11	F_2 = .12
I (within G)	72	10,477.92	
G x T	2	82.75	F_3 = 1.49
I x T (within G)	72	2,003.35	
Total	149	12,601.07	

Appendix F (Cont.)

Source	d.f.	SS	F
SOCIABILITY			
T	1	55.82	F_1 = 4.34 NS
G	2	341.08	F_2 = .90
I (within G)	72	13,625.28	
G x T	2	510.82	F_3 = 1.99
I x T (within G)	72	925.86	
Total	149	15,458.86	
COMMUNALITY			
T	1	9.76	F_1 = 14.30 NS
G	2	969.02	F_2 = 6.06
I (within G)	72	5,755.48	
G x T	2	17.70	F_3 = 1.30
I x T (within G)	72	491.53	
Total	149	7,243.49	
SELF-ACCEPTANCE			
T	1	33.85	F_1 = 16.50 NS
G	2	89.46	F_2 = .22
I (within G)	72	14,682.32	
G x T	2	31.38	F_3 = .76
I x T (within G)	72	1,477.26	
Total	149	16,314.27	

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Appendix H

ANALYSES OF VARIANCE, EPPS VARIABLES, COMBINED SEMESTERS
[Greenhouse and Geisser (11)]

Source d.f. SS F

Source	d.f.	SS	F
ACHIEVEMENT			
T	1	21.19	F_1 = .51 NS
G	2	71.06	F_2 = .22
I (within G)	72	11,706.72	
G x T	2	50.98	F_3 = .62
I x T (within G)	72	2,974.45	
Total	149	14,824.40	
DEFERENCE			
T	1	147.00	F_1 = 2.41 NS
G	2	306.48	F_2 = .23
I (within G)	72	11,893.12	
G x T	2	116.75	F_3 = .10
I x T (within G)	72	4393.29	
Total	149	16,856.64	
ORDER			
T	1	4.60	F_1 = .16 NS
G	2	968.42	F_2 = 2.18
I (within G)	72	15,987.08	
G x T	2	162.08	F_3 = 2.79
I x T (within G)	72	2,099.31	
Total	149	19,221.49	

Appendix H (Cont.)

Source	d.f.	SS	F
EXHIBITIONISM			
T	1	901.88	F_1 = 25.17 NS
G	2	985.96	F_2 = 2.81
I (within G)	72	12,648.80	
G x T	2	83.78	F_3 = 1.17
I x T (within G)	72	2,579.34	
Total	149	17,199.76	
AUTONOMY			
T	1	44.34	F_1 = 10.89 NS
G	2	116.50	F_2 = .41
I (within G)	72	10,305.08	
G x T	2	114.96	F_3 = 1.41
I x T (within G)	72	2,932.46	
Total	149	13,513.34	
AFFILIATION			
T	1	43.88	F_1 = 9.44 NS
G	2	94.24	F_2 = .36
I (within G)	72	9,418.40	
G x T	2	165.18	F_3 = 1.71
I x T (within G)	72	3,484.44	
Total	149	13,206.14	

Appendix H (Cont.)

Source	d.f.	SS	F
INTROCEPTION			
T	1	102.10	F_1 = 2.86 NS
G	2	344.02	F_2 = 1.34
I (within G)	72	9,163.16	
G x T	2	8.87	F_3 = .12
I x T (within G)	72	2,571.02	
Total	149	12,189.17	
SUCCORANCE			
T	1	126.96	F_1 = 6.72 NS
G	2	52.27	F_2 = .14
I (within G)	72	13,360.40	
G x T	2	59.88	F_3 = .16
I x T (within G)	72	13,599.51	
Total	149	16,511.57	
DOMINANCE			
T	1	14.42	F_1 = 2.85 NS
G	2	879.48	F_2 = 2.90
I (within G)	72	10,918.48	
G x T	2	12.42	F_3 = .12
I x T (within G)	72	3,646.16	
Total	149	15,470.96	

Appendix H (Cont.)

Source	d.f.	SS	F
ABASEMENT			
T	1	217.81	F_1 = 6.33 NS
G	2	47.78	F_2 = .15
I (within G)	72	11,274.72	
G x T	2	25.86	F_3 = .38
I x T (within G)	72	2,478.82	
Total	149	14,044.99	
NURTURANCE			
T	1	73.50	F_1 = 18.47 NS
G	2	168.12	F_2 = .40
I (within G)	72	15,041.32	
G x T	2	20.76	F_3 = .26
I x T (within G)	72	2,865.37	
Total	149	18,169.07	
CHANGE			
T	1	62.41	F_1 = 26.89 NS
G	2	236.10	F_2 = .07
I (within G)	72	11,555.88	
G x T	2	26.18	F_3 = .56
I x T (within G)	72	1,670.93	
Total	149	13,551.50	

Appendix H (Cont.)

Source	d.f.	SS	F
ENDURANCE			
T	1	73.50	F_1 = 25.10 NS
G	2	533.32	F_2 = 1.72
I (within G)	72	11,170.12	
G x T	2	67.08	F_3 = 1.15
I x T (within G)	72	2,108.27	
Total	149	13,952.29	
HETEROSEXUALITY			
T	1	8.64	F_1 = 18.10 NS
G	2	237.50	F_2 = .71
I (within G)	72	12,015.28	
G x T	2	68.32	F_3 = .72
I x T (within G)	72	3,437.75	
Total	149	15,767.49	
AGGRESSION			
T	1	42.94	F_1 = 6.51 NS
G	2	525.51	F_2 = .17
I (within G)	72	11,281.36	
G x T	2	45.06	F_3 = .34
I x T (within G)	72	4,750.39	
Total	149	16,645.50	

PRECEDING PAGE MISSING

Appendix J

Student Rating Sheet, Semester I.

THE UNIVERSITY OF WISCONSIN
Department of Curriculum and Instruction

Semester I, 1964-65
272-212-2

Lois
Name

My reactions to being a participant in the research project are:

1. Flander's materials "get me puzzled. Since it indicated I conducted class in a more pupil directed manner, does it mean that I lack confidence and the class is carrying on and taking too much initiative?"

2. Conferences with Professor Ringness "Since I've had only one, I can't determine whether they were of any value to me since I only gave information and haven't received any."

3. Supervisory Conferences "Informative but since I didn't have much to say, it only put me more at ease and seemed to give my supervisor the impression that I was quiet and lacked self-confidence."

4. Instruments "No feedback so at present all I can say is that it has been unhelpful. Am in the control group."

5. General (Diary/Log reports etc.) "Helped me to sit and really evaluate myself and the worthwhileness of my teaching activities. Felt that I either told the truth or cheated myself of something."

6. Briefly describe the criteria you used to select what was suitable for a Flander's observation. (How was the word, discussion, defined for you?) "Discussion means continuous verbal interaction between the teacher and pupils in arriving at some objective or objectives. The above definition of discussion was my criteria in selecting an activity for a Flanders' observation."